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A Gibson Girl Among the Cannibals

Who's Buried in the Tomb of John Paul Jones?

Playing *Ulama*: You Lose, You Die

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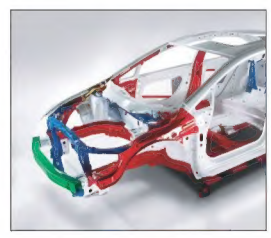

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As a massive blaze consumed San Francisco following the great earthquake 100 years ago this month, a few dozen brave men fought to save the mint—and the U.S. economy

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Might a peninsula on the Greek island of Cephalonia be the fabled island of Ithaca, the realm of Homer's wandering hero? An amateur scholar makes a persuasive case that indeed it is

BY FERGUS M. BORDEWICH / PHOTOGRAPHS BY JEFFREY AARONSON

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American scientist Patricia Wright came late to primatology. But she has made the study and preservation of Madagascar's diverse lemur populations her life

BY RICHARD CONNIFF

110 STUDENTS OF THE GAME

Archaeologists are researching *ulama*—the oldest sport in the Americas—to better understand the people who were here before the Europeans

BY JOHN FOX / PHOTOGRAPHS BY JANET JARMAN

Refugees fleeing downtown San Francisco brought news of huge fires that seemed to be merging into one horrific conflagration—headed right for the mint.

—"GRACE UNDER FIRE," PAGE 56

THIS PAGE: Little was left standing (including this statue at Stanford University of the great zoologist and geologist Louis Agassiz) after America's most destructive earthquake shook San Francisco in April 1906. Photograph courtesy of the U.S. Geological Survey Photographic Archive.

COVER: The agility and playfulness of lemurs (a female sifaka lemur, with baby, bounding in Berenty, Madagascar) make them a favorite at zoos. Photograph by Steve Bloom. Inset by Kate Brooks / Polaris.

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On one occasion, the two women were charged by a gigantic lizard. On another, in the remote village of Weriadai, they were confronted by indignant tribesmen.

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THIS PAGE:
A tribesman in traditional warrior dress in New Britain, Papua New Guinea, 2005. Photo by Michele Westmorland.

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EDITOR'S NOTE

GIVING BACK

NOTHING ROUTINE ABOUT THESE ASSIGNMENTS

BY CAREY WINFREY

JOURNALIST AND NOVELIST Michael Castleman, who wrote our story about the San Francisco Mint (p. 56), traces his interest in it to his days as a coin-collecting kid growing up outside New York City. "The San Francisco Mint was the nation's smallest and struck the fewest coins," he says. "Anything carrying its 'S' mint mark was more valuable than coins minted in Philadelphia or Denver." Castleman abandoned numismatics in 1965, but he remained fascinated by the mint and, shortly after he moved to San Francisco in 1975, made a beeline for the little museum housed in it. "I learned what happened there in 1906," he recalls, "how 60 men literally endured the fires of hell and lived to tell about it. They were quiet heroes, the kind history forgets—until someone remembers. I feel honored to tell their story."

MOLAVI (LEFT) IN RIYADH: TENNIS ANYONE?

FREELANCE JOURNALIST Afshin Molavi first went to Saudi Arabia in 1993 as a journalism intern on a program sponsored by the National Council on U.S.-Arab Relations. He'd been told that as an American of Iranian and Shiite descent, he might not feel welcome in the majority-Sunni kingdom. Then he was selected by Khaled al-Maeena, editor in chief of *Arab News*.

"Was it my journalism background, my skills, my writing samples? Actually," Molavi reports, "it was none of the above. 'It was your tennis,' al-Maeena told me years later. 'You had written that you were once a tennis instructor. I wanted to improve my tennis, so I thought, why not bring you aboard?' It was my first introduction to something I have learned over the years as a reporter on the ground in the Middle East: that academic theorizing about Muslims often clashes with the more mundane reality, in this case a choice based on tennis. As it turned out, al-Maeena had a bad ankle when I landed in the kingdom, so we never played. On my recent visit he told me: 'I'm still looking for a good instructor.'" Molavi's report begins on page 68.

RICHARD CONNIFF traveled 17 hours by air from New York City to Antananarivo, Madagascar, and then 12 hours by car over rough, unpaved roads to reach Ranamofana National Park. There primatologist Patricia Wright conducts research on lemurs, primates endangered due to habitat loss and poaching. Conniff was struck not only by the park's beauty but by the skill of the Malagasy tourist guides, who, he says, "know the area so well that they can find you a tiny mouse lemur, which will eat bananas out of your hand." Recently removed from the government payroll, the guides did not even have uniforms, so when Conniff got back to the United States he ordered lemur-illustrated T-shirts for them. Conniff says he often feels that he and his readers get more out of the articles he writes than his subjects do. In providing the T-shirts, he says, he feels that he has "given back a little."

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Read this information carefully before you start taking VYTORIN. Review this information each time you refill your prescription for VYTORIN as there may be new information. This information does not take the place of talking with your doctor about your medical condition or your treatment. If you have any questions about VYTORIN, ask your doctor. Only your doctor can determine if VYTORIN is right for you.

What is VYTORIN?

VYTORIN is a medicine used to lower levels of total cholesterol, LDL (bad) cholesterol, and fatty substances called triglycerides in the blood. In addition, VYTORIN raises levels of HDL (good) cholesterol. It is used for patients who cannot control their cholesterol levels by diet alone. You should stay on a cholesterol-lowering diet while taking this medicine.

VYTORIN works to reduce your cholesterol in two ways. It reduces the cholesterol absorbed in your digestive tract, as well as the cholesterol your body makes by itself. VYTORIN does not help you lose weight.

Who should not take VYTORIN?

Do not take VYTORIN:

- If you are allergic to ezetimibe or simvastatin, the active ingredients in VYTORIN, or to the inactive ingredients. For a list of inactive ingredients, see the "Inactive ingredients" section at the end of this information sheet.
- If you have active liver disease or repeated blood tests indicating possible liver problems.
- If you are pregnant, or think you may be pregnant, or planning to become pregnant or breast-feeding.

VYTORIN is not recommended for use in children under 10 years of age.

What should I tell my doctor before and while taking VYTORIN?

Tell your doctor right away if you experience unexplained muscle pain, tenderness, or weakness. This is because on rare occasions, muscle problems can be serious, including muscle breakdown resulting in kidney damage.

The risk of muscle breakdown is greater at higher doses of VYTORIN.

The risk of muscle breakdown is greater in patients with kidney problems.

Taking VYTORIN with certain substances can increase the risk of muscle problems. It is particularly important to tell your doctor if you are taking any of the following:

- cyclosporine
- danazol
- antifungal agents (such as itraconazole or ketoconazole)
- fibric acid derivatives (such as gemfibrozil, bezafibrate, or fenofibrate)
- the antibiotics erythromycin, clarithromycin, and telithromycin
- HIV protease inhibitors (such as indinavir, nelfinavir, ritonavir, and saquinavir)
- the antidepressant nefazodone
- amiodarone (a drug used to treat an irregular heartbeat)
- verapamil (a drug used to treat high blood pressure, chest pain associated with heart disease, or other heart conditions)
- large doses (≥1 g/day) of niacin or nicotinic acid
- large quantities of grapefruit juice (>1 quart daily)

It is also important to tell your doctor if you are taking coumarin anticoagulants (drugs that prevent blood clots, such as warfarin).

Tell your doctor about any prescription and nonprescription medicines you are taking or plan to take, including natural or herbal remedies.

Tell your doctor about all your medical conditions including allergies.

Tell your doctor if you:

- drink substantial quantities of alcohol or ever had liver problems. VYTORIN may not be right for you.
- are pregnant or plan to become pregnant. Do not use VYTORIN if you are pregnant, trying to become pregnant or suspect that you are pregnant. If you become pregnant while taking VYTORIN, stop taking it and contact your doctor immediately.
- are breast-feeding. Do not use VYTORIN if you are breast-feeding.

Tell other doctors prescribing a new medication that you are taking VYTORIN.

How should I take VYTORIN?

- Take VYTORIN once a day, in the evening, with or without food.
- Try to take VYTORIN as prescribed. If you miss a dose, do not take an extra dose. Just resume your usual schedule.
- Continue to follow a cholesterol-lowering diet while taking VYTORIN. Ask your doctor if you need diet information.
- Keep taking VYTORIN unless your doctor tells you to stop. If you stop taking VYTORIN, your cholesterol may rise again.

What should I do in case of an overdose?

Contact your doctor immediately.

What are the possible side effects of VYTORIN?

See your doctor regularly to check your cholesterol level and to check for side effects. Your doctor may do blood tests to check your liver before you start taking VYTORIN and during treatment.

In clinical studies patients reported the following common side effects while taking VYTORIN: headache and muscle pain (see What should I tell my doctor before and while taking VYTORIN?).

The following side effects have been reported in general use with either ezetimibe or simvastatin tablets (tablets that contain the active ingredients of VYTORIN):

- allergic reactions including swelling of the face, lips, tongue, and/or throat that may cause difficulty in breathing or swallowing (which may require treatment right away), rash, hives; joint pain; alterations in some laboratory blood tests; liver problems; inflammation of the pancreas; nausea; gallstones; inflammation of the gallbladder.

Tell your doctor if you are having these or any other medical problems while on VYTORIN. This is <u>not</u> a complete list of side effects. For a complete list, ask your doctor or pharmacist.

General Information about VYTORIN

Medicines are sometimes prescribed for conditions that are not mentioned in patient information leaflets. Do not use VYTORIN for a condition for which it was not prescribed. Do not give VYTORIN to other people, even if they have the same condition you have. It may harm them.

This summarizes the most important information about VYTORIN. If you would like more information, talk with your doctor. You can ask your pharmacist or doctor for information about VYTORIN that is written for health professionals. For additional information, visit the following web site: vytorin.com.

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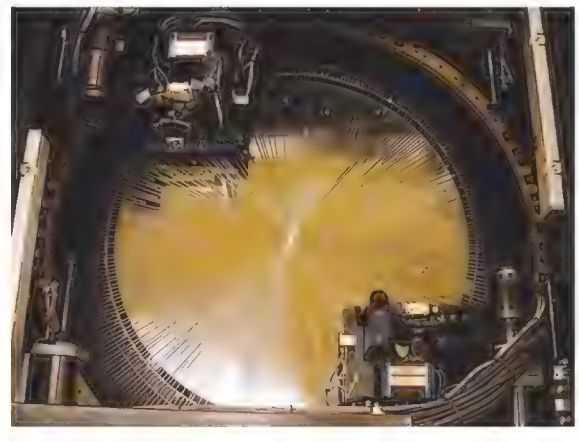
Fred and Ginger

Two robots, neither as graceful as its namesake but no less accomplished, are among advances keeping scientists on the cutting edge

"HIGH TECH" and "in a museum" aren't usually found in the same sentence. But just as our exhibitions increasingly incorporate 21st-century display screens, Smithsonian researchers are using cutting-edge technologies. On the west side of the Chesapeake Bay, scientists at the Smithsonian Environmental Research Center (SERC) are studying mercury and other potentially dangerous toxins in the environment with one of the world's most powerful, advanced devices, a recently acquired Inductively Coupled Plasma Mass Spectrometer, or ICP-MS.

That sounds far too complicated to explain in a book, much less a magazine column, but here are the basics. The ICP-MS quickly analyzes samples of water, mud, fish, air and other substances to determine their elemental composition. It is a particularly useful instrument, because it can measure many elements at the same time at concentrations down to parts per trillion. This enables our scientists to study variants, or isotopes, of an element. The results help them better understand how mercury and other metals move and accumulate in food webs. And the findings help regulators predict how fast mercury levels in fish will decrease in response to emissions controls.



Fred and Ginger quickly and precisely configure the optical fibers beneath them.

Scientists at the Smithsonian Center for Materials Research and Education (SCMRE) are using an ICP-MS to investigate a 2,600-year-old civilization. They are analyzing Chinese gold fragments—from the circa sixth century B.C. Eastern Zhou period—which belong to the Smithsonian's Sackler and Freer Galleries. Experts at the Freer concluded that the fragments are linked both stylistically and technically and that a few pieces actually fit together. To confirm this, the SCMRE researchers used a method called laser ablation to remove tiny specks of gold from the fragments. Analysis of the specks by the ICP-MS provides additional evidence that most of the gold fragments have a common source and that some may even come from the same artifact.

Another state-of-the-art technology being used at the Smithsonian is DNA bar-coding, a method of characterizing species of organisms. If physics was the most important scientific discipline of the last century, biology may well be the most crucial of this one. That is why the National Museum of Natural History is proud to be the host organization for an international consortium developing standards for DNA barcoding. With this methodology and the increasingly sophisticated devices that make it possible, a genetic sample as small as 650 base pairs (for comparison, the human genome probably has three billion base pairs) can be rapidly and inexpensively analyzed to identify species and, potentially, discover new ones, even in degraded materials that have been sitting in museums for decades. Such work is also important for human health: the National Zoo is using DNA technology to track diseases including avian flu.

At the other end of the continuum—from the tiniest pieces of DNA to the largest thing we know, the cosmos—astronomers at the Smithsonian Astrophysical Observatory are using the Hectospec, a one-of-a-kind instrument designed and built by a team of scientists and engineers there. With its 300 optical fibers, this device simultaneously captures light, collected by the observatory's 6.5 meter converted Multiple Mirror Telescope, from 300 stars or galaxies. The fibers are configured by dual robots called "Fred and Ginger" for their elegance and precision; the pair hardly ever miss a step. Though each optical fiber is minuscule in diameter, it is able to transmit the light of an entire galaxy for spectral analysis. Astronomers use the color and intensity of the light to better understand the origins of stars and galaxies, their chemical composition, and their distance from us.

From wetlands to ancient gold fragments to gene segments to vast space, our scientists are employing the latest technologies. Though the Smithsonian is best known for preserving the past, it continues to be a preeminent research institution for the future.

Lawrence M. Small
SECRETARY OF THE SMITHSONIAN INSTITUTION

JEFF TINSLEY / SMITHSONIAN INSTITUTION; DR. DANIEL FABRICANT

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LETTERS

Readers respond to the February issue:

GENETIC MISCONCEPTIONS

"Medical Sleuth," about Dr. D. Holmes Morton's work with genetic diseases among Amish and Mennonite people in Pennsylvania, prompted many readers to ask why such communities do not avail themselves of premarital or prenatal genetic screening to prevent the birth of afflicted children.

Dr. Morton responds:

When the Plain people, which include the Amish and Mennonite, came to Lancaster County from Europe about 300 years ago, they carried a set of recessive gene mutations that are still present in U.S. and European populations. As the two Plain populations expanded from 20 to 50 founding couples to 20,000 to 50,000 people, some recessive mutations became more common, while other genes became less common or even disappeared. The change in gene mutation frequencies within a new, small, rapidly expanding population is called "random genetic drift," and it—not inbreeding or natural selection—is the major reason for the high incidence of specific recessive disorders in isolated human populations, including the Plain communities. Over the same period, genetic drift has also been at work within the U.S. general population. As a result, cystic fibrosis is a very common recessive disorder in the U.S. Caucasian population, but is absent in the Plain populations of Lancaster County. The carrier rate for this disorder is now 1 in 25 people, 4,000 per 100,000 in the general U.S. population.

Contrary to popular belief, preventing the birth of children with recessive genetic disorders, or allowing affected infants to die from lack of medical care, does not significantly decrease the disease risk in a population over time. That's because the risk of genetic disease in a population resides in carriers, rather than in a few affected children who have two copies of the abnormal gene.

For the Plain people, prearranged

1 2 3 4 5 6 7 8 9 10
A
B
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E
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Paintings, left to right: *Ocean Park #105* © 1978 Richard Diebenkorn, Collection of the Modern Art Museum of Fort Worth, Museum purchase, Sid W. Richardson Foundation Endowment Fund and The Burnett Foundation; *Beta Mu* © 1960 Morris Louis, Collection of the Modern Art Museum of Fort Worth, Museum purchase, The Benjamin J. Tillar Memorial Trust; *Untitled* © 1977 Agnes Martin

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marriages and therapeutic abortions are not acceptable. But they have readily taken advantage of genetic testing and expanded newborn screening for certain inherited disorders, because successful treatment usually depends on early detection and prevention of severe illnesses.

Our clinic seeks to improve methods of diagnosing and treating genetic disorders in the Plain communities. An understanding that many common medical problems arise from genetic causes and are nonetheless treatable may prove to be an important contribution of the Plain people to modern medicine.

D. HOLMES MORTON, M.D
CLINIC FOR SPECIAL CHILDREN
STRASBURG, PENNSYLVANIA

BAHAMIAN BLENNY

I SHARE GORDON CHAPLIN'S concern about the degradation of Bahamian reef systems ("A Return to the Reefs"). In fact, in 1956, while working on my PhD dissertation, I visited James E. Böhlke at the Academy of Natural Sciences in Philadelphia when he was collaborating with the author's father, Charles C.G. Chaplin, on the book *Fishes of the Bahamas*. Böhlke generously made available their collections, and I even named a species of blenny after him, *Malacoctenus boehlkei*.

VICTOR G. SPRINGER
NATIONAL MUSEUM OF NATURAL HISTORY
WASHINGTON, D.C.

LESSON LEARNED?

DAVID VON DREHLE ("A Lesson in Hate") hauls out the cliché "Why do they hate us?" and says jihad theorist Sayyid Qutb and his disciples were "insane." This is hardly helpful in broadening our understanding of the crisis. The real answer can be found earlier in the article: "Western powers were creating, with absolute colonial confidence, new maps and governments for the Middle East. For a proud man like Sayyid Qutb, the humiliation of his country at the hands of secular leaders and Western puppets was galling." Yet Von Drehle emphasizes that Qutb, and thus many citizens of the region today, "hate us" because of our haircuts.

ROB RILEY
CHICAGO, ILLINOIS

MY GRANDFATHER Henry "Hank" Croissant owned a barbershop in Greeley, Colorado, from the '40s until his death in the mid '60s, and he surely must have cut Sayyid Qutb's hair. Hank loved his country, his family, his life and everything about Greeley. My grandfather was everything Qutb wasn't.

Please send letters to LettersEd@si.edu or to **Letters, Smithsonian, MRC 951, P.O. Box 37012, Washington, D.C. 20013.** Include a telephone number and address. Letters may be edited for clarity or space. Because of the high volume of mail we receive, we cannot respond to all letters. Send queries about the Smithsonian Institution to info@si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013.

OF TEXAS

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Acrylic resin Magna.....C-10

Oil and charcoal.....B-2

India ink, graphite and gesso.....C-15

Tumbleweeds and dust, nowhere in sight..E-20

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Wild Things

- LIFE AS WE KNOW IT -

WHAT'S UP? Tasmanian devils may transmit a deadly facial cancer by bites • Lions have disappeared from 82 percent of their historical range

CAVE DWELLERS

A study of 30 caves in Sequoia and Kings Canyon National Parks in California has yielded 27 new species, including an eyeless pseudoscorpion (above) and a daddy longlegs with jaws as big as its body. "This just confirms how little we know about the world around us," says the park service's Joel Despain.

ATTACK OF THE KILLER EAGLE

What killed the Taung child, the celebrated human ancestor who lived two million years ago? A prehistoric eagle, according to a new analysis of the child's skull, the first hominid fossil ever discovered in Africa, in 1924. Claw and beak marks inside the skull (a cast, right) suggest the bird plunged a talon into the child's brain through his eye and carried the body to its nest. Researchers had long believed that a large cat killed the young *Australopithecus africanus*, even though the skull was originally found among monkey and tortoise remains similar to that near nests of today's African crowned eagle. Lee Berger, a paleoanthropologist at the University of the Witwatersrand in South Africa, says this is the first solid evidence that birds hunted early humans.

HERE COMES THE SUN

Yes, birds greet the day with a cacophony of song. But different voices join the "dawn chorus" at different times. How come? According to a study in an Ecuadorean forest by Karl Berg of the University of California at Berkeley, birds that perch highest in trees and have big eyes (like the dusky-capped flycatcher, right) tend to pipe up earliest because they catch the light first. He says it's no accident birds chirp at daybreak. If they sang in the dark, they would attract predators they couldn't see; and dawn is too dim for finding food. Notice how the chorus fades once the singers go hunting for breakfast.

SAFETY IN SMALL NUMBERS

In tropical forests, rare trees tend to live longest, perhaps because fungi and viruses have evolved to attack common tree species, sparing odd ones (like *Dipertyx panamensis*, left). The research, led by Smithsonian's Tropical Research Institute in Panama, helps explain biodiversity—and shows it can pay to be different.

Observed

NAMES: *Cotton-top tamarin (below) and common marmoset.*

POST-MATING RITUAL: Males gain weight while their mates are pregnant.

WHAT'S THEIR EXCUSE? Child care, possibly.

ARE YOU KIDDING? No. A recent University of Wisconsin at Madison study—the first to demonstrate weight gain in primate expectant fathers—notes that males of these monogamous species equal or surpass females in offspring care. The males may be bulking up so they can cope with the demands of fatherhood. Similar weight gains have been reported anecdotally in human males, but not systematically studied.

CLOCKWISE FROM TOP LEFT: JEAN KREJCA; GIANLUIGI GUERCIA / AFP / GETTY IMAGES; R. & N. BOWERS / VIREO; TOM AND PAT LEESON; CHRISTIAN ZIEGLER / SMITHSONIAN TROPICAL RESEARCH INSTITUTE

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SYNVISC is generally well tolerated. However, it may not work for everyone. The side effects most commonly seen when SYNVISC is injected into the knee were pain, swelling, and/or fluid build-up around the knee. Cases where the swelling is extensive or painful should be discussed with your doctor. Other side effects, such as rash, have been reported rarely. Before trying SYNVISC, tell your doctor if you are allergic to products from birds—such as feathers, eggs, or poultry—or if your leg is swollen or infected. Talk to your doctor before resuming strenuous weight-bearing activities after treatment. SYNVISC has not been tested in children, pregnant women, or women who are nursing. You should tell your doctor if you think you are pregnant or if you are nursing a child.

*Treatment with SYNVISC may not eliminate the need for other OA medications.

Please see additional important Patient Information on the next page.

See your knee pain specialist.

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PATIENT INFORMATION

Be sure to read the following important information carefully. This information does not take the place of your doctor's advice. If you do not understand this information or want to know more, ask your doctor.

WHAT IS SYNVISC?

Synvisc is a gel-like mixture that is made up of hylan A fluid, hylan B gel, and salt water. Hylan A and hylan B are made from a substance called hyaluronan (pronounced hye-a-loo-ROE-nan), also known as sodium hyaluronate that comes from chicken combs. This is a natural substance found in the body and is present in very high amounts in joints. The body's own hyaluronan acts like a lubricant and a shock absorber in the joint and is needed for the joint to work properly. Osteoarthritis (pronounced os-TE-o-ar-THRI-tis) (OA) is a type of arthritis that involves the wearing down of cartilage (the protective covering on the ends of your bones). In OA, there may not be enough hyaluronan, and there may be a decrease in the quality of the hyaluronan in the joint. Synvisc comes in syringes containing 2 mL (half a teaspoon) of product. Synvisc is injected directly into your knee.

WHAT IS SYNVISC USED FOR?

Synvisc is used to relieve knee pain due to OA. It is used for patients who do not get enough relief from simple painkillers, such as acetaminophen, or from exercise and physical therapy.

WHAT ARE THE BENEFITS OF SYNVISC?

Two medical studies involving a total of 132 patients were done in Germany. The patients in these studies were at least 40 years old and had knee pain due to OA. The patients were placed in one of two groups. One group was given an injection of Synvisc into one or both knees once a week for three weeks. The second group was given an injection of salt water once a week for three weeks. As part of the study, knee joint pain was measured for 26 weeks. Also, patients and doctors were asked to judge the success of the treatment for 26 weeks. Patients with OA knee pain, who did not get pain relief with other medicines, got pain relief with Synvisc. The patients given Synvisc had more pain relief than the patients given salt water. Some patients started to feel pain relief after the first week of Synvisc treatment. The most pain relief and the greatest amount of treatment success was seen 8 to 12 weeks after Synvisc treatment started.

A medical study done in the United States involved 90 patients. The patients were at least 40 years old and had knee pain due to OA. Patients were placed into one of two groups. One group was given Synvisc once a week for three weeks. The second group had a needle inserted into the knee to have any fluid removed (this procedure is called arthrocentesis [pronounced AR-thro-sen-TE-sis]) once a week for three weeks. Patients improved after Synvisc treatment, but not more than patients who had arthrocentesis. This study was different from the German studies because the last time the two groups were compared was only two weeks after the last Synvisc injection. The study was also different in other ways, including length of time that patients had to stop taking medicines before they could start treatment. The length of time patients had to stop taking medicines was two weeks in the German studies and four weeks in the U.S. study.

WHAT OTHER TREATMENTS ARE AVAILABLE FOR OA?

If you have OA, there are other things you can do besides getting Synvisc. These include:

NON-DRUG TREATMENTS

- avoiding activities that cause knee pain
- exercise
- physical therapy
- removal of excess fluid from your knee

DRUG THERAPY

- pain relievers such as acetaminophen and narcotics
- drugs that reduce inflammation (signs of inflammation are swelling, pain or redness), such as aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen
- steroids that are injected directly into your knee

ARE THERE ANY REASONS WHY YOU SHOULD NOT RECEIVE SYNVISC?

- You should not get this product if you have had any allergic reaction before to Synvisc or hyaluronan products. Signs of an allergic reaction may include swelling of your face, tongue, or throat; difficulty breathing or swallowing; shortness of breath; wheezing; chest pain; a tightness in your throat; sleepiness; rash; itching; hives; flushing; and/or fever. You should call your doctor immediately if you develop any of these signs of an allergic reaction.
- You should not be given Synvisc if you have a knee joint infection or skin diseases or infections around the area where the injection will be given. Talk to your doctor if you have any questions about this information.

THINGS YOU SHOULD KNOW ABOUT SYNVISC:

- Synvisc is only for injection into the knee, performed by a doctor or other qualified health care professional.
- Tell your doctor if you are allergic to products from birds such as feathers, eggs, and poultry.
- After you receive the injection, you may need to avoid activities such as jogging, tennis, heavy lifting, or standing for a long time.
- Synvisc has not been tested in pregnant women, or women who are nursing. You should tell your doctor if you think you are pregnant, or if you are nursing a child.
- The safety and effectiveness of Synvisc have not been tested in children.

POSSIBLE SIDE EFFECTS:

- The side effects (also called reactions) sometimes seen when Synvisc is injected into the knee as a first or repeat set of injections were pain, swelling, heat, redness, and/or fluid build-up around the knee. These reactions were generally mild and did not last long, but sometimes fluid accumulation was considerable and painful; cases where the swelling is extensive and painful should be discussed with your doctor. The reactions seemed to occur more often when Synvisc was injected into the knee as a repeat set of injections than when Synvisc was injected as a first set of injections.
- These reactions were generally treated by giving pain relievers by mouth such as acetaminophen or by giving NSAIDs by mouth or injections of steroids, or by removing fluid from the knee joint. Patients have rarely undergone arthroscopy (a surgical inspection of the knee joint) and other medical procedures.
- Rare cases of knee joint infection have been reported after Synvisc injections.
- Rashes, hives and itching have been seen in patients after Synvisc treatment. Before you are given Synvisc, tell your doctor if something like this has ever happened to you after receiving an injection of Synvisc or other hyaluronan products.
- Other less common side effects have been: muscle pain/cramps, flushing and/or swelling of your face, fast heartbeat, nausea (or feeling sick to your stomach), dizziness, fever, chills, headache, difficulty breathing, swelling in your arms and/or legs, prickly feeling of your skin, and in rare cases a low number of platelets in the blood (platelets are a type of blood cell that are needed to help clot your blood when you are cut or injured).
- If any of the above symptoms or signs appear after you are given Synvisc, or if you have any other problems, you should call your doctor.

HOW IS SYNVISC GIVEN?

Your doctor will give you your injection of Synvisc (2mL) into your knee once a week, for a total of three injections.

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HOW DO I GET MORE INFORMATION ABOUT SYNVISC?

If you have any questions or would like to find out more about Synvisc, you may call Genzyme Biosurgery at 1-888-3-SYNVISC (1-888-379-6847).

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Important information about insurance coverage for SYNVISC treatments

SYNVISC is eligible for reimbursement by most insurance plans. Many require that your physician provide SYNVISC. If your physician does not provide SYNVISC and he or she writes a prescription for SYNVISC, some insurance plans, including Medicare, may not cover the cost. Therefore, it is recommended that you ask your physician if his or her office provides SYNVISC. Procedures vary from policy to policy, so please check with your physician and/or your insurer. If you have additional questions about insurance coverage, please contact the SYNVISC Reimbursement Hotline at 1-800-982-8292. This toll-free number can be accessed between 8:30 a.m. and 6:00 p.m., Eastern Time, Monday through Friday.

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STANLEY J. FORMAN

THE EVENT WAS THE CLIMAX "OF EVERYTHING BAD THAT CAN HAPPEN WHEN YOU LIVE IN A TOWN THAT IS SO HEATED UP," THE PHOTOGRAPHER SAYS.

STARS AND STRIFE

A CLASH OF CULTURES AT BOSTON CITY HALL IN 1976 SYMBOLIZED THE CITY'S YEARS-LONG CONFRONTATION WITH THE BUSING OF SCHOOLCHILDREN **BY CELIA WREN**

THE INCIDENT on Boston's City Hall Plaza took no more than 15 seconds, Ted Landsmark recalls. He was set upon and punched; someone swung an American flag at him; his attackers fled; he glanced down at his suit. "I realized I was covered with blood, and at that moment I understood that something quite significant had happened."

What had happened was partly an accident of timing—a collision between a man walking to a meeting and young protesters out to make a point, a skirmish in Boston's epic confrontation over court-ordered busing to desegregate the city's public schools. But in Stanley J. Forman's photograph, the symbolism of the moment—the anger, the flag, the staggered figure that happened to be Ted Landsmark—seemed to epitomize the frustrations and grievances of a city on the edge.

Boston's battle over busing dominated local civic life for more than a decade following a federal judge's 1974 order to

"A bell went off in my head . . . 'They're going to get him!'"

desegregate the schools. (The judge, W. Arthur Garrity, withdrew from the case 16 years later.) Forman, then a photographer for the *Boston Herald American*, had covered the issue from the start. "I was there for every bad thing that happened," he says, "and this was the climax of it—of everything bad that can happen when you live in a town that is so heated up."

On that day, April 5, 1976, Forman went to City Hall Plaza to photograph a demonstration by students opposed to busing. After taking a few pictures of the protesters, he glanced over his shoulder. "I saw this black man coming around the corner and a bell went off in my head," he says. "And I said, 'They're going to get him!' I didn't think they would get him with the flag."

HIS COVERAGE OF A 1975 BOSTON FIRE (ABOVE) EARNED FORMAN (BELOW) A PULITZER PRIZE AND LED TO CHANGES IN CITY SAFETY CODES.

Landsmark, a Yale-educated lawyer then 29, was late for a meeting on affirmative action in city construction projects. As he walked toward city hall, he was mulling over what he planned to say, when a crowd rounded a corner and suddenly approached him.

"There wasn't anything for me to do at that point other than to walk straight," recalls Landsmark, now president of the Boston Architectural Center, an architectural college.

Several people assaulted him; his glasses were knocked off; he was hit and kicked. Joseph Rakes, then 17, swung a flagpole bearing the Stars and Stripes at him—Landsmark says Rakes tried to hit him but not spear him, as Forman's picture suggests—and narrowly missed. One blow broke Landsmark's nose.

A labor foreman now living in Maine, Rakes vividly recalls the "blind anger" that motivated him—anger aimed, he says, at the urban policies that were ruining the close-knit South Boston neighborhood where he'd grown up. "When the busing started, it was, 'You can't have half your friends'—that's the way it was put towards us," Rakes says. "They took half the guys and girls I grew up with and said, 'You're going to school on the other side of town.' Nobody understood it at [age] 15."

The day he borrowed his family's flag for the demonstration, Rakes says, he was simmering with two years of pent-up frustration. Another set of protesters threw debris and rocks at his group, he adds, and that "sent everybody over the edge. . . . It kind of exploded at that moment."

The photograph won Forman his second consecutive Pulitzer Prize. (Today he is a videographer for WCVB-TV in Boston.) "I don't want to say I was lucky to get it, because I knew what I was doing," he says. "But I was lucky to get it."

The photograph also made Landsmark something of a local celebrity, and he became a spokesman in the media and other public forums on racial tolerance. From 1989 to 1997 he worked in the office of the mayor of Boston, dealing with violence reduction and other issues.

Though Landsmark acknowledges that Forman's photograph led him to a "leadership role" on issues of race and economics, he also says he's tired of being asked about it. "What I find somewhat annoying, after all this time," he says, "is that that single photograph sometimes overshadows many of the actual accomplishments that I've been involved with." Last December, for example, he received the American Institute of Architects' Whitney M. Young Jr. Award, for exemplifying the profession's responsibility to take on social issues.

Rakes' actions at City Hall Plaza led to a conviction for assault with a deadly weapon and a two-year suspended sentence. "The picture—it says what it says, but it doesn't tell the whole story," he says. "You know, there's nothing I can do about it. I just move on in my life."

CELIA WREN is the media columnist for Commonweal. *She lives in Virginia.*

STANLEY J. FORMAN; WCVB-TV

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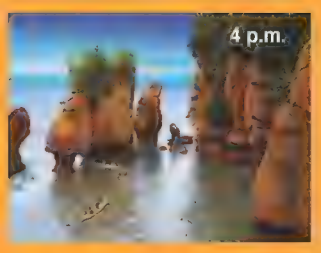

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[*James McNeill Whistler's palette, c. 1888-90*]
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REFINED PALETTE

SCHOLARS SAY THIS 19TH-CENTURY ARTIFACT COULD HAVE BELONGED TO THE CELEBRATED AMERICAN PAINTER **BY OWEN EDWARDS**

THOSE OF US who love to look at paintings for the sheer pleasure of it tend naturally to think a lot about the end result and very little about the means to that end. We forget that a work of art is work.

Yet anyone who has ever visited a painter's studio will have seen the tools of the trade, in regimental order or glorious disarray: brushes,

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Discover Lunesta,™ a sleep aid that can change your nights.

Even when your restless mind keeps you awake, Lunesta can give your body and mind the soothing sleep you need. Lunesta not only helps most people fall asleep fast, it helps you sleep all through the night. Peacefully, uninterrupted. Lunesta works quickly, so you should only take it right before bed. And prescription Lunesta is non-narcotic, and approved for long-term use. Of course, do not use sleep medicines for extended periods without first talking to your doctor.

Now's the time to catch the sleep you need. If you've been hesitant to take a prescription sleep aid, be sure to ask your doctor about Lunesta.

How are your sleeping habits? There are many changes you can make in your lifestyle to improve your sleep. To find out more go to www.lunesta.com

Important Safety Information: Be sure you have at least eight hours to devote to sleep before becoming active. Until you know how you'll react to Lunesta, you should not drive or operate machinery. Do not use alcohol while taking Lunesta. Most sleep medicines carry some risk of dependency. Side effects may include unpleasant taste, headache, drowsiness and dizziness.

See important patient information on the next page.

Leave the rest to Lunesta

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1-800-Lunesta www.lunesta.com

Lunesta™ (eszopiclone)c

1, 2 AND 3 MG TABLETS

Please read this summary of information about LUNESTA before you talk to your doctor or start using LUNESTA. It is not meant to take the place of your doctor's instructions. If you have any questions about LUNESTA tablets, be sure to ask your doctor or pharmacist.

LUNESTA is used to treat different types of sleep problems, such as difficulty in falling asleep, difficulty in maintaining sleep during the night, and waking up too early in the morning. Most people with insomnia have more than one of these problems. You should take LUNESTA immediately before going to bed because of the risk of falling.

LUNESTA belongs to a group of medicines known as "hypnotics" or, simply, sleep medicines. There are many different sleep medicines available to help people sleep better. Insomnia is often transient and intermittent. It usually requires treatment for only a short time, usually 7 to 10 days up to 2 weeks. If your insomnia does not improve after 7 to 10 days of treatment, see your doctor, because it may be a sign of an underlying condition. Some people have chronic sleep problems that may require more prolonged use of sleep medicine. However, you should not use these medicines for long periods without talking with your doctor about the risks and benefits of prolonged use.

Side Effects

All medicines have side effects. The most common side effects of sleep medicines are:

- Drowsiness
- Dizziness
- Lightheadedness
- Difficulty with coordination

Sleep medicines can make you sleepy during the day. How drowsy you feel depends upon how your body reacts to the medicine, which sleep medicine you are taking, and how large a dose your doctor has prescribed. Daytime drowsiness is best avoided by taking the lowest dose possible that will still help you sleep at night. Your doctor will work with you to find the dose of LUNESTA that is best for you. Some people taking LUNESTA have reported next-day sleepiness.

To manage these side effects while you are taking this medicine:

- When you first start taking LUNESTA or any other sleep medicine, until you know whether the medicine will still have some effect on you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
- Do not drink alcohol when you are taking LUNESTA or any sleep medicine. Alcohol can increase the side effects of LUNESTA or any other sleep medicine.
- Do not take any other medicines without asking your doctor first. This includes medicines you can buy without a prescription. Some medicines can cause drowsiness and are best avoided while taking LUNESTA.
- Always take the exact dose of LUNESTA prescribed by your doctor. Never change your dose without talking to your doctor first.

Special Concerns

There are some special problems that may occur while taking sleep medicines.

Memory Problems

Sleep medicines may cause a special type of memory loss or "amnesia." When this occurs, a person may not remember what has happened for several hours after taking the medicine. This is usually not a problem since most people fall asleep after taking the medicine. Memory loss can be a problem, however, when sleep medicines are taken while traveling, such as during an airplane flight and the person wakes up before the effect of the medicine is gone. This has been called "traveler's amnesia." Memory problems have been reported rarely by patients taking LUNESTA in clinical studies. In most cases, memory problems can be avoided if you take LUNESTA only when you are able to get a full night of sleep before you need to be active again. Be sure to talk to your doctor if you think you are having memory problems.

Tolerance

When sleep medicines are used every night for more than a few weeks, they may lose their effectiveness in helping you sleep. This is known as "tolerance." Development of tolerance to LUNESTA was not observed in a clinical study of 6 months' duration. Insomnia is often transient and intermittent, and prolonged use of sleep medicines is generally not necessary. Some people, though, have chronic sleep problems that may require more prolonged use of sleep medicine. If your sleep problems continue, consult your doctor, who will determine whether other measures are needed to overcome your sleep problems.

Dependence

Sleep medicines can cause dependence in some people, especially when these medicines are used regularly for longer than a few weeks or at high doses. Dependence is the need to continue taking a medicine because stopping it is unpleasant.

When people develop dependence, stopping the medicine suddenly may cause unpleasant symptoms (see *Withdrawal* below). They may find they have to keep taking the medicine either at the prescribed dose or at increasing doses just to avoid withdrawal symptoms.

All people taking sleep medicines have some risk of becoming dependent on the medicine. However, people who have been dependent on alcohol or other drugs in the past may have a higher chance of becoming addicted to sleep medicines. This possibility must be considered before using these medicines for more than a few weeks. If you have been addicted to alcohol or drugs in the past, it is important to tell your doctor before starting LUNESTA or any sleep medicine.

Withdrawal

Withdrawal symptoms may occur when sleep medicines are stopped suddenly after being used daily for a long time. In some cases, these symptoms can occur even if the medicine has been used for only a week or two. In mild cases, withdrawal symptoms may include unpleasant feelings. In more severe cases, abdominal and muscle cramps, vomiting, sweating, shakiness, and, rarely, seizures may occur. These more severe withdrawal symptoms are very uncommon. Although withdrawal symptoms have not been observed in the relatively limited controlled trials experience with LUNESTA, there is, nevertheless, the risk of such events in association with the use of any sleep medicine.

Another problem that may occur when sleep medicines are stopped is known as "rebound insomnia." This means that a person may have more trouble sleeping the first few nights after the medicine is stopped than before starting the medicine. If you should experience rebound insomnia, do not get discouraged. This problem usually goes away on its own after 1 or 2 nights.

If you have been taking LUNESTA or any other sleep medicine for more than 1 or 2 weeks, do not stop taking it on your own. Always follow your doctor's directions.

Changes In Behavior And Thinking

Some people using sleep medicines have experienced unusual changes in their thinking and/or behavior. These effects are not common. However, they have included:

- More outgoing or aggressive behavior than normal
- Confusion
- Strange behavior
- Agitation
- Hallucinations
- Worsening of depression
- Suicidal thoughts

How often these effects occur depends on several factors, such as a person's general health, the use of other medicines, and which sleep medicine is being used. Clinical experience with LUNESTA suggests that it is rarely associated with these behavior changes.

It is also important to realize it is rarely clear whether these behavior changes are caused by the medicine, are caused by an illness, or have occurred on their own. In fact, sleep problems that do not improve may be due to illnesses that were present before the medicine was used. If you or your family notice any changes in your behavior, or if you have any unusual or disturbing thoughts, call your doctor immediately.

Pregnancy And Breastfeeding

Sleep medicines may cause sedation or other potential effects in the unborn baby when used during the last weeks of pregnancy. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking LUNESTA.

In addition, a very small amount of LUNESTA may be present in breast milk after use of the medication. The effects of very small amounts of LUNESTA on an infant are not known; therefore, as with all other prescription sleep medicines, it is recommended that you not take LUNESTA if you are breast-feeding a baby.

Safe Use Of Sleep Medicines

To ensure the safe and effective use of LUNESTA or any other sleep medicine, you should observe the following cautions:

1. LUNESTA is a prescription medicine and should be used ONLY as directed by your doctor. Follow your doctor's instructions about how to take, when to take, and how long to take LUNESTA.
2. Never use LUNESTA or any other sleep medicine for longer than directed by your doctor.
3. If you notice any unusual and/or disturbing thoughts or behavior during treatment with LUNESTA or any other sleep medicine, contact your doctor.
4. Tell your doctor about any medicines you may be taking, including medicines you may buy without a prescription and herbal preparations. You should also tell your doctor if you drink alcohol. DO NOT use alcohol while taking LUNESTA or any other sleep medicine.
5. Do not take LUNESTA unless you are able to get 8 or more hours of sleep before you must be active again.
6. Do not increase the prescribed dose of LUNESTA or any other sleep medicine unless instructed by your doctor.
7. When you first start taking LUNESTA or any other sleep medicine, until you know whether the medicine will still have some effect on you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
8. Be aware that you may have more sleeping problems the first night or two after stopping any sleep medicine.
9. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, if you become pregnant, or if you are breastfeeding a baby while taking LUNESTA.
10. As with all prescription medicines, never share LUNESTA or any other sleep medicine with anyone else. Always store LUNESTA or any other sleep medicine in the original container and out of reach of children.
11. Be sure to tell your doctor if you suffer from depression.
12. LUNESTA works very quickly. You should only take LUNESTA immediately before going to bed.
13. For LUNESTA to work best, you should not take it with or immediately after a high-fat, heavy meal.
14. Some people, such as older adults (i.e., ages 65 and over) and people with liver disease, should start with the lower dose (1 mg) of LUNESTA. Your doctor may choose to start therapy at 2 mg. In general, adults under age 65 should be treated with 2 or 3 mg.
15. Each tablet is a single dose; do not crush or break the tablet.

Note: This summary provides important information about LUNESTA. If you would like more information, ask your doctor or pharmacist to let you read the Prescribing Information and then discuss it with him or her.

Rx only

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contorted tubes of oils, cans of acrylic paints, stretched canvases ready to be primed—evidence of daunting effort. When a painter becomes celebrated, this evidence takes on an aura, as if invested with the essence of genius. So it is that a palette thought to have been owned by James McNeill Whistler, the 19th-century American expatriate master, has been an object of special interest to scholars at the Smithsonian Archives of American Art. According to curator Liza Kirwin, the palette was donated in 1972 by Stephanie Dabo, widow of Leon Dabo, a painter who claimed to have been a student of Whistler's. Mrs. Dabo, who died in 1974, said that her husband had received the palette from the master himself. Included in the donation were three brushes thought to be Whistler's, because of their unusual length. (The painter stood several feet from his canvases while working.)

Whistler was born in 1834 in Lowell, Massachusetts. As a boy he studied drawing at the Imperial Academy of Fine Arts in St. Petersburg, Russia, where his civil engineer father was helping build a rail system. He spent his adult life in London and Paris.

Whistler's unemotive portraits foretell photographic techniques. "Art should be independent of all claptrap—should stand alone, and appeal to the artistic sense of eye or ear, without confounding this with emotions entirely foreign to it, as devotion, pity, love, patriotism, and the like," he once wrote.

One of the first major Western painters influenced by Japanese artists such as Hiroshige, Whistler used diluted oils, applied quickly to give his paintings a spontaneity similar to watercolors. His moody realism separated him from the Impressionists, and during his life his pictures were thought to be old fashioned. But now his best work, and his art-for-art's-sake credo, seem to prefigure Modernism.

But back to methodology. Like other painters of his era, Whistler was a palette particularist. He prepared the colors on his palette completely before beginning a painting, and is said to have paid as much attention to his students' palettes as to their pictures. Art critic and Whistler expert Avis Berman says that artist's materials "are very sensuous—think of the simple act of sticking one's brush into a thick gob of color. Having a famous painter's palette is like having a Lou Gehrig baseball."

IT WAS WHISTLER'S ROUTINE TO METICULOUSLY ARRANGE PIGMENTS ON HIS PALETTE. THE ARTIST ESPOUSED ART FOR ART'S SAKE (AN 1899 SEASCAPE, ABOVE), "INDEPENDENT OF ALL CLAPTRAP."

There's also much to be learned from a palette, says Margaret MacDonald, a Whistler expert at Scotland's University of Glasgow, such as "the way that a painter organized and mixed his paints, what paints he used and what medium—like linseed oil—was used." A palette can also suggest how stable a particular artist's paint is and how it should be conserved. Studio art professor Edwin Ahlstrom of Montgomery College in Rockville, Maryland, calls palettes "historic documents." He says they "offer insight into how painting was done in premodernist times."

To confirm the Smithsonian palette's provenance, the archives recently turned it over to Kathryn Morales, a conservation-science technician at the National Gallery of Art in Washington, D.C. Morales identified a wide spectrum of individual colors—some 20 in all, each with its composing elements—and turned up some anomalies, including cadmium red, a paint not commercially produced during Whistler's life, and very little lead white, which the artist used extensively. Kirwin says that there was a tradition in the 19th century of saving and passing along palettes, so the presence of anachronistic paints doesn't rule out Whistler's original ownership. It is also possible that Leon Dabo, who died in 1960, cleaned the palette and used it himself, with the hope that some of the master's magic might rub off. Dabo's use would also explain why the paint daubs are not arranged as Whistler would have laid them out (and as they appear on Whistler palettes in Glasgow and at the Tate Gallery in London), with white in the center of the spectrum and colors radiating out on two sides.

Ahlstrom agrees that Dabo could have used the palette, inspired by the idea of a master having owned it. "As a piece, it's very elegant," he says. "But from the moment I saw it, it didn't look like a Whistler palette to me."

Is it or isn't it? Perhaps only Whistler can tell us, and he's not returning my calls.

OWEN EDWARDS is executive editor of Edutopia, *a magazine about education.*

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GOD SAVE THE...RAVENS

Ravens have roamed the courtyards of England's Tower of London for centuries. But the six who constitute the tower's current flock have now—like Anne Boleyn and Sir Walter Raleigh—been imprisoned within its walls. Concerned that the birds might succumb to avian flu—now on the wing throughout Europe—Derrick Coyle, the tower's raven master, built cages inside the 11th-century stronghold and moved the birds into them this past February. Legend has it that if the ravens, whose wings are clipped, ever leave the tower, the fortress and the kingdom will fall. "We believe it was the safest thing to do," says Coyle.

—HELEN STARKWEATHER

PHOTOGRAPH BY LYNNE FERGUSSON / REUTERS

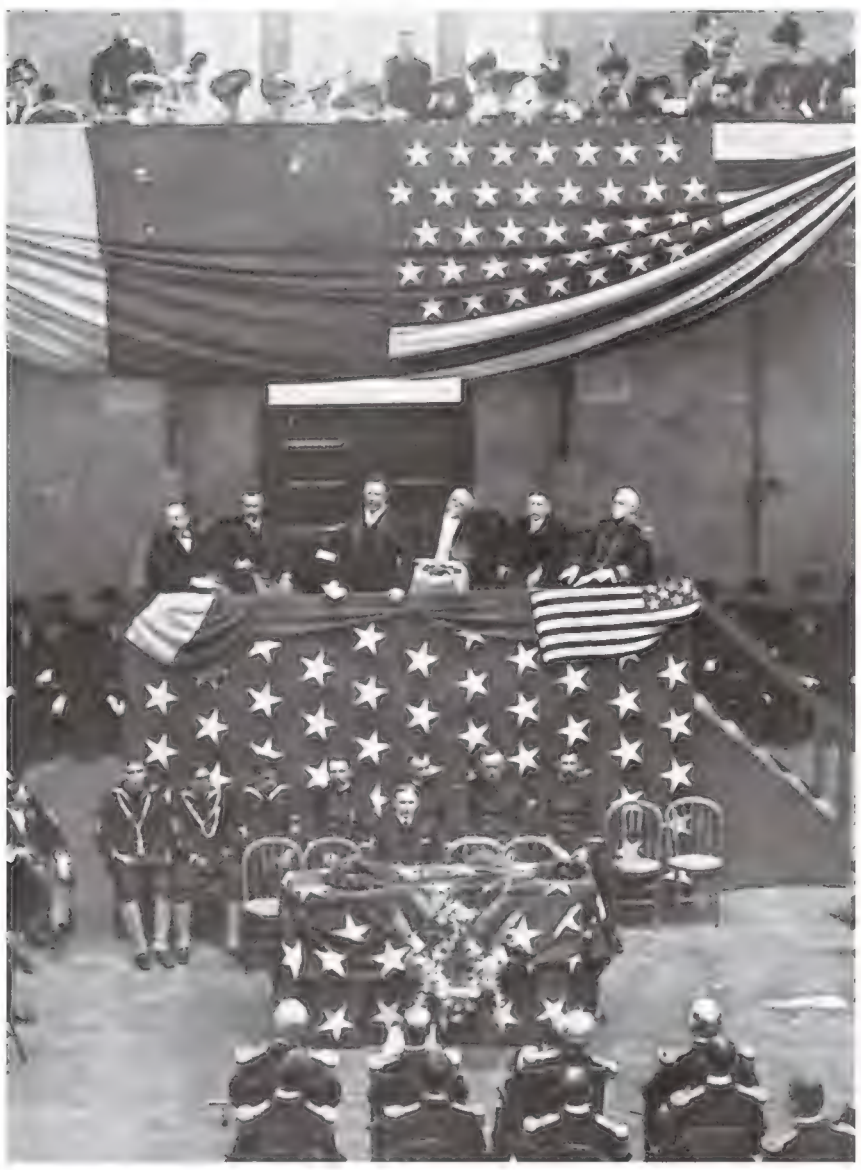
HOME IS THE SAILOR...

ONE HUNDRED YEARS AGO THIS MONTH, JOHN PAUL JONES WAS WELCOMED HOME WITH GREAT FANFARE AT THE U.S. NAVAL ACADEMY. BUT WAS THE BODY REALLY HIS? **BY ADAM GOODHEART**

IN A SOFTLY LIT CRYPT beneath the chapel of the U.S. Naval Academy, a massive sarcophagus of veined marble rests on the backs of four bronze dolphins. At a respectful distance from the tomb, two midshipmen with gleaming swords stand vigil over a body and a mystery nearly as old as our country itself.

One hundred years ago, on April 24, 1906, amid pomp and fanfare the likes of which Annapolis had never seen, an American president laid to rest a national hero who had died more than a century before. The great man's remains had only recently been returned to these shores, rescued from an unmarked grave in a foreign land—a discovery that was hailed, on two continents, as a triumph. Yet even at the time, there were whispers that the cadaver brought home in glory might be the wrong one. The whispers have never been completely silenced.

AFTER THE RETURN OF THE BODY IN 1905, PRESIDENT THEODORE ROOSEVELT (LEFT, IN 1906) LIONIZED JONES (BELOW BY N. C. WYETH, 1940).



traditional pottery of the Acoma. I can't believe I used to think all Native American culture was the same. Then I visited New Mexico and discovered 19 pueblos, all with a unique style, from the colorful feast days of the Santa Clara to the tradition

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"Paul Jones!" one exclaimed. All present removed their hats.

A SIX-YEAR QUEST LED U.S. AMBASSADOR HORACE PORTER (ABOVE, FAR LEFT) TO THE PARIS CEMETERY WHERE JONES HAD BEEN BURIED. IN AN EFFORT TO CONFIRM THE IDENTITY OF THE CORPSE HIS MEN EXHUMED, HE HAD A PHOTO OF JONES' FACE SUPERIMPOSED ON A PHOTO OF A BUST OF THE ADMIRAL.

The stillness of the crypt is broken by the voice of a tour guide in Colonial costume. "John Paul Jones was truly a hero," she says. "He never lost a battle—came close, but he never lost." She tells the story of how he received the first salute offered by a foreign power to an American naval vessel, and how, in 1779, at the helm of the *Bonhomme Richard*, he captured the British frigate HMS *Serapis* even as his own ship sank beneath him—uttering the defiant cry, "I have not yet begun to fight!" She mentions his legendary good looks, his popularity with the ladies. "Jones died a relatively young man, at the age of 45," she says as she leads her group toward the exit.

She doesn't mention that a significant chapter of Jones' story began only with his death, and that it was more eventful than many people's lives.

IN THE SPRING OF 1905, in a cramped, fetid tunnel beneath a working-class neighborhood of Paris, a group of men gathered around a battered coffin. Several of them were well dressed, in dark frock coats and bowler hats; others, in grimy, patched clothing, held picks and shovels. By the light of candles flickering around the head of the coffin, the men watched as its heavy lid was carefully removed. A sharp alcoholic odor arose, and the candlelight illuminated cloth and straw. Clearing away the wrapping, the men stared into the face of the corpse. "Paul Jones!" someone exclaimed, and all present solemnly removed their hats.

It was an especially satisfying moment for one of those frock-coated gentlemen: Gen. Horace Porter, the United States ambassador to France, for whom the discovery was the culmination of a tireless six-year quest.

Porter, too, was an American war hero. He had won the Medal of Honor at Chickamauga in 1863 and become one of Gen. Ulysses S. Grant's favorite aides-de-camp, even standing at the Union commander's side when Lee surrendered at Appomattox. When—after arriving in Paris in 1897—Porter learned that Jones' body had lain for more than a century in a forgotten grave somewhere beneath the city, he embarked on finding it in 1899 with the stamina of a veteran campaigner.

Over the years, other Americans had come to Paris in search of Jones, but had been thwarted by a lack of documents. The French records of his death and burial in 1792 had been destroyed in a fire; one searcher, in the 1850s, regretfully concluded that the hero's bones had probably ended up in the vast Paris catacombs, lost forever among millions of anonymous skeletons. But through persistence and luck, Porter found an article with a transcript of the burial record. The article attested that Jones had

P. 32 RIGHT: N.C. WYETH / GRANGER COLLECTION, NEW YORK; P. 32 LEFT AND P. 34 TOP GRANGER COLLECTION (2); NAVAL HISTORICAL CENTER COLLECTION

When it comes to bad cholesterol–

Ask your doctor if lower is better.

Getting high cholesterol down is important.

Doctors know lowering high cholesterol is important for everyone. But for some people, it's even more important. In fact, a panel of medical experts recently proposed updated guidelines suggesting many patients aim for an even lower cholesterol goal than before.*

Working with your doctor is key to helping you reach your cholesterol goal.

If, after all you've tried—including diet and exercise—your doctor believes you need to get your bad cholesterol even lower, ask whether CRESTOR might help.

Aim lower.

CRESTOR may make the difference you need. In fact, the 10-mg dose of CRESTOR, along with diet, can lower bad cholesterol by as much as 52% (vs 7% with placebo). That means your LDL-C—the bad cholesterol—could go down about half. Your results may vary.

Is CRESTOR right for you?

That's another conversation you need to have with your doctor. Your doctor will decide the best course of treatment for you after assessing your particular needs.

Get more information about CRESTOR.

To learn more about CRESTOR, or if you are without prescription coverage and can't afford your medication, AstraZeneca may be able to help. Call 800-CRESTOR or visit CRESTOR.com.

Here is important safety information about CRESTOR you need to know.

CRESTOR is prescribed along with diet for lowering high cholesterol and has not been determined to prevent heart disease, heart attacks, or strokes. CRESTOR is not right for everyone, including women who are nursing, pregnant, or who may become pregnant, or anyone with liver problems. Your doctor will do blood tests before and during treatment with CRESTOR to monitor your liver function. Unexplained muscle pain and weakness could be a sign of a rare but serious side effect and should be reported to your doctor right away. The 40-mg dose of CRESTOR is only for patients who do not reach goal on 20 mg. Be sure to tell your doctor if you are taking any medications. Side effects occur infrequently and include muscle aches, constipation, weakness, abdominal pain, and nausea. They are usually mild and tend to go away.

If your doctor says, "lower is better," aim lower with CRESTOR.

CRESTOR®
rosuvastatin calcium

*Adult Treatment Panel (ATP) III, Update, 2004

Please read the important Product Information about CRESTOR on the adjacent page and discuss it with your doctor.

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Please read this summary carefully and then ask your doctor about CRESTOR. No advertisement can provide all the information needed to determine if a drug is right for you. This advertisement does not take the place of careful discussions with your doctor. Only your doctor has the training to weigh the risks and benefits of a prescription drug.

BRIEF SUMMARY: For full Prescribing Information, see package insert. **INDICATIONS AND USAGE** CRESTOR is indicated: 1. as an adjunct to diet to reduce elevated total-C, LDL-C, ApoB, nonHDL-C, and TG levels and to increase HDL-C in patients with primary hypercholesterolemia (heterozygous familial and nonfamilial) and mixed dyslipidemia (Fredrickson Type IIa and IIb); 2. as an adjunct to diet for the treatment of patients with elevated serum TG levels (Fredrickson Type IV); 3. to reduce LDL-C, total-C, and ApoB in patients with homozygous familial hypercholesterolemia as an adjunct to other lipid-lowering treatments (e.g., LDL apheresis) or if such treatments are unavailable. **CONTRAINDICATIONS** CRESTOR is contraindicated in patients with a known hypersensitivity to any component of this product. Rosuvastatin is contraindicated in patients with active liver disease or with unexplained persistent elevations of serum transaminases (see WARNINGS, Liver Enzymes). **Pregnancy and Lactation** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. ROSUVASTATIN SHOULD BE ADMINISTERED TO WOMEN OF CHILDBEARING AGE ONLY WHEN SUCH PATIENTS ARE HIGHLY UNLIKELY TO CONCEIVE AND HAVE BEEN INFORMED OF THE POTENTIAL HAZARDS. If the patient becomes pregnant while taking this drug, therapy should be discontinued immediately and the patient apprised of the potential hazard to the fetus. **WARNINGS Liver Enzymes** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. The incidence of persistent elevations (>3 times the upper limit of normal [ULN] occurring on 2 or more consecutive occasions) in serum transaminases in fixed dose studies was 0.4, 0, 0, and 0.1% in patients who received rosuvastatin 5, 10, 20, and 40 mg, respectively. In most cases, the elevations were transient and resolved or improved on continued therapy or after a brief interruption in therapy. There were two cases of jaundice, for which a relationship to rosuvastatin therapy could not be determined, which resolved after discontinuation of therapy. There were no cases of liver failure or irreversible liver disease in these trials. **It is recommended that liver function tests be performed before and at 12 weeks following both the initiation of therapy and any elevation of dose, and periodically (e.g., semiannually) thereafter.** Liver enzyme changes generally occur in the first 3 months of treatment with rosuvastatin. Patients who develop increased transaminase levels should be monitored until the abnormalities have resolved. Should an increase in ALT or AST of >3 times ULN persist, reduction of dose or withdrawal of rosuvastatin is recommended. Rosuvastatin should be used with caution in patients who consume substantial quantities of alcohol and/or have a history of liver disease (see CLINICAL PHARMACOLOGY, Special Populations, Hepatic Insufficiency). Active liver disease or unexplained persistent transaminase elevations are contraindications to the use of rosuvastatin (see CONTRAINDICATIONS). **Myopathy/Rhabdomyolysis Rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria have been reported with rosuvastatin and with other drugs in this class.** Uncomplicated myalgia has been reported in rosuvastatin-treated patients (see ADVERSE REACTIONS). Creatine kinase (CK) elevations (>10 times upper limit of normal) occurred in 0.2% to 0.4% of patients taking rosuvastatin at doses up to 40 mg in clinical studies. Treatment-related myopathy, defined as muscle aches or muscle weakness in conjunction with increases in CK values >10 times upper limit of normal, was reported in up to 0.1% of patients taking rosuvastatin doses of up to 40 mg in clinical studies. In clinical trials, the incidence of myopathy and rhabdomyolysis increased at doses of rosuvastatin above the recommended dosage range (5 to 40 mg). In postmarketing experience, effects on skeletal muscle, e.g. uncomplicated myalgia, myopathy and, rarely, rhabdomyolysis have been reported in patients treated with HMG-CoA reductase inhibitors including rosuvastatin. As with other HMG-CoA reductase inhibitors, reports of rhabdomyolysis with rosuvastatin are rare, but higher at the highest marketed dose (40 mg). Factors that may predispose patients to myopathy with HMG-CoA reductase inhibitors include advanced age (≥65 years), hypothyroidism, and renal insufficiency. Consequently: 1. Rosuvastatin should be prescribed with caution in patients with predisposing factors for myopathy, such as, renal impairment (see DOSAGE AND ADMINISTRATION), advanced age, and inadequately treated hypothyroidism. 2. Patients should be advised to promptly report unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. Rosuvastatin therapy should be discontinued if markedly elevated CK levels occur or myopathy is diagnosed or suspected. 3. The 40 mg dose of rosuvastatin is reserved only for those patients who have not achieved their LDL-C goal utilizing the 20 mg dose of rosuvastatin once daily (see DOSAGE AND ADMINISTRATION). 4. The risk of myopathy during treatment with rosuvastatin may be increased with concurrent administration of other lipid-lowering therapies or cyclosporine, (see CLINICAL PHARMACOLOGY, Drug Interactions, PRECAUTIONS, Drug Interactions, and DOSAGE AND ADMINISTRATION). **The benefit of further alterations in lipid levels by the combined use of rosuvastatin with fibrates or niacin should be carefully weighed against the potential risks of this combination. Combination therapy with rosuvastatin and gemfibrozil should generally be avoided. (See DOSAGE AND ADMINISTRATION and PRECAUTIONS, Drug Interactions).** 5. **The risk of myopathy during treatment with rosuvastatin may be increased in circumstances which increase rosuvastatin drug levels (see CLINICAL PHARMACOLOGY, Special Populations, Race and Renal Insufficiency, and PRECAUTIONS, General).** 6. **Rosuvastatin therapy should also be temporarily withheld in any patient with an acute, serious condition suggestive of myopathy or predisposing to the development of renal failure secondary to rhabdomyolysis (e.g., sepsis, hypotension, dehydration, major surgery, trauma, severe metabolic, endocrine, and electrolyte disorders, or uncontrolled seizures).** **PRECAUTIONS General** Before instituting therapy with rosuvastatin, an attempt should be made to control hypercholesterolemia with appropriate diet and exercise, weight reduction in obese patients, and treatment of underlying medical problems (see INDICATIONS AND USAGE). Administration of rosuvastatin 20 mg to patients with severe renal impairment (CL_{cr} <30 mL/min/1.73 m^2) resulted in a 3-fold increase in plasma concentrations of rosuvastatin compared with healthy volunteers (see WARNINGS, Myopathy/Rhabdomyolysis and DOSAGE AND ADMINISTRATION). The result of a large pharmacokinetic study conducted in the US demonstrated an approximate 2-fold elevation in median exposure in Asian subjects (having either Filipino, Chinese, Japanese, Korean, Vietnamese or Asian-Indian origin) compared with a Caucasian control group. This increase should be considered when making rosuvastatin dosing decisions for Asian patients. (See WARNINGS, Myopathy/Rhabdomyolysis; CLINICAL PHARMACOLOGY, Special Populations, Race, and DOSAGE AND ADMINISTRATION.) **Information for Patients** Patients should be advised to report promptly unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. When taking rosuvastatin with an aluminum and magnesium hydroxide combination antacid, the antacid should be taken at least 2 hours after rosuvastatin administration (see CLINICAL PHARMACOLOGY, Drug Interactions). **Laboratory Tests** In the rosuvastatin clinical trial program, dipstick-positive proteinuria and microscopic hematuria were observed among rosuvastatin-treated patients, predominantly in patients dosed above the recommended dose range (i.e., 80 mg). However, this finding was more frequent in patients taking rosuvastatin 40 mg, when compared to lower doses of rosuvastatin or comparator statins, though it was generally transient and was not associated with worsening renal function. Although the clinical significance of this finding is unknown, a dose reduction should be considered for patients on rosuvastatin 40 mg therapy with unexplained persistent proteinuria during routine urinalysis testing. **Drug Interactions Cyclosporine:** When rosuvastatin 10 mg was coadministered with cyclosporine in cardiac transplant patients, rosuvastatin mean C_{max} and mean AUC were increased 11-fold and 7-fold, respectively, compared with healthy volunteers. These increases are considered to be clinically significant and require special consideration in the dosing of rosuvastatin to patients taking concomitant cyclosporine (see WARNINGS, Myopathy/Rhabdomyolysis, and DOSAGE AND ADMINISTRATION). **Warfarin:** Coadministration of rosuvastatin to patients on stable warfarin therapy resulted in clinically significant rises in INR (>4, baseline 2-3). In patients taking coumarin anticoagulants and rosuvastatin concomitantly, INR should be determined before starting rosuvastatin and frequently enough during early therapy to ensure that no significant alteration of INR occurs. Once a stable INR time has been documented, INR can be monitored at the intervals usually recommended for patients on coumarin anticoagulants. If the dose of rosuvastatin is changed, the same procedure should be repeated. Rosuvastatin therapy has not been associated with bleeding or with changes in INR in patients not taking anticoagulants. **Gemfibrozil:** Coadministration of a single rosuvastatin dose to healthy volunteers on gemfibrozil (600 mg twice daily) resulted in a 2.2- and 1.9-fold, respectively, increase in mean C_{max} and mean AUC of rosuvastatin (see DOSAGE AND ADMINISTRATION). **Endocrine Function** Although clinical studies have shown that rosuvastatin alone does not reduce basal plasma cortisol concentration or impair adrenal reserve, caution should be exercised if any HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered concomitantly with drugs that may decrease the levels or activity of endogenous steroid hormones such as ketoconazole, spironolactone, and cimetidine. **CNS Toxicity** CNS vascular lesions, characterized by perivascular hemorrhages, edema, and mononuclear cell infiltration of perivascular spaces, have been observed in dogs treated with several other members of this drug class. A chemically similar drug in this class produced dose-dependent optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in dogs, at a dose that produced plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose. Edema, hemorrhage, and partial necrosis in the interstitium of the choroid plexus was observed in a female dog sacrificed moribund at day 24 at 90 mg/kg/day by oral gavage (systemic exposures 100 times the human exposure at 40 mg/day based on AUC comparisons). Corneal opacity was seen in dogs treated for 52 weeks at 6 mg/kg/day by oral gavage (systemic exposures 20 times the human exposure at 40 mg/day based on AUC comparisons). Cataracts were seen in dogs treated for 12 weeks by oral gavage at 30 mg/kg/day (systemic exposures 60 times the human exposure at 40 mg/day based on AUC comparisons). Retinal dysplasia and retinal loss were seen in dogs treated for 4 weeks by oral gavage at 90 mg/kg/day (systemic exposures 100 times the human exposure at 40 mg/day based on AUC). Doses ≤30 mg/kg/day (systemic exposures ≤60 times the human exposure at 40 mg/day based on AUC comparisons) following treatment up to one year, did not reveal retinal findings. **Carcinogenesis, Mutagenesis, Impairment of Fertility** In a 104-week carcinogenicity study in rats at dose levels of 2, 20, 60, or 80 mg/kg/day by oral gavage, the incidence of uterine stromal polyps was significantly increased in females at 80 mg/kg/day at

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rosuvastatin calcium

systemic exposure 20 times the human exposure at 40 mg/day based on AUC. Increased incidence of polyps was not seen at lower doses. In a 107-week carcinogenicity study in mice given 10, 60, 200 mg/kg/day by oral gavage, an increased incidence of hepatocellular adenoma/carcinoma was observed at 200 mg/kg/day at systemic exposures 20 times human exposure at 40 mg/day based on AUC. An increased incidence of hepatocellular tumors was not seen at lower doses. Rosuvastatin was not mutagenic or clastogenic with or without metabolic activation in the Ames test with *Salmonella typhimurium* and *Escherichia coli*, the mouse lymphoma assay, and the chromosomal aberration assay in Chinese hamster lung cells. Rosuvastatin was negative in the *in vivo* mouse micronucleus test. In rat fertility studies with oral gavage doses of 5, 15, 50 mg/kg/day, males were treated for 9 weeks prior to and throughout mating and females were treated 2 weeks prior to mating and throughout mating until gestation day 7. No adverse effect on fertility was observed at 50 mg/kg/day (systemic exposures up to 10 times human exposure at 40 mg/day based on AUC comparisons). In testicles of dogs treated with rosuvastatin at 30 mg/kg/day for one month, spermatidic giant cells were seen. Spermatidic giant cells were observed in monkeys after 6-month treatment at 30 mg/kg/day in addition to vacuolation of seminiferous tubular epithelium. Exposures in the dog were 20 times and in the monkey 10 times human exposure at 40 mg/day based on body surface area comparisons. Similar findings have been seen with other drugs in this class. **Pregnancy** ***Pregnancy Category X*** See CONTRAINDICATIONS. Rosuvastatin may cause fetal harm when administered to a pregnant woman. Rosuvastatin is contraindicated in women who are or may become pregnant. Safety in pregnant women has not been established. There are no adequate and well-controlled studies of rosuvastatin in pregnant women. Rosuvastatin crosses the placenta and is found in fetal tissue and amniotic fluid at 3% and 20%, respectively, of the maternal plasma concentration following a single 25 mg/kg oral gavage dose on gestation day 16 in rats. A higher fetal tissue distribution (25% maternal plasma concentration) was observed in rabbits after a single oral gavage dose of 1 mg/kg on gestation day 18. If this drug is administered to a woman with reproductive potential, the patient should be apprised of the potential hazard to a fetus. In female rats given oral gavage doses of 5, 15, 50 mg/kg/day rosuvastatin before mating and continuing through day 7 postcoitus results in decreased fetal body weight (female pups) and delayed ossification at the high dose (systemic exposures 10 times human exposure at 40 mg/day based on AUC comparisons). In pregnant rats given oral gavage doses of 2, 20, 50 mg/kg/day from gestation day 7 through lactation day 21 (weaning), decreased pup survival occurred in groups given 50 mg/kg/day, systemic exposures ≥12 times human exposure at 40 mg/day based on body surface area comparisons. In pregnant rabbits given oral gavage doses of 0.3, 1, 3 mg/kg/day from gestation day 6 to lactation day 18 (weaning), exposures equivalent to human exposure at 40 mg/day based on body surface area comparisons, decreased fetal viability and maternal mortality was observed. Rosuvastatin was not teratogenic in rats at ≤25 mg/kg/day or in rabbits ≤3 mg/kg/day (systemic exposures equivalent to human exposure at 40 mg/day based on AUC or body surface comparison, respectively). **Nursing Mothers** It is not known whether rosuvastatin is excreted in human milk. Studies in lactating rats have demonstrated that rosuvastatin is secreted into breast milk at levels 3 times higher than that obtained in the plasma following oral gavage dosing. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from rosuvastatin, a decision should be made whether to discontinue nursing or administration of rosuvastatin taking into account the importance of the drug to the lactating woman. **Pediatric Use** The safety and effectiveness in pediatric patients have not been established. Treatment experience with rosuvastatin in a pediatric population is limited to 8 patients with homozygous FH. None of these patients was below 8 years of age. **Geriatric Use** Of the 10,275 patients in clinical studies with rosuvastatin, 3,159 (31%) were 65 years and older, and 698 (6.8%) were 75 years and older. The overall frequency of adverse events and types of adverse events were similar in patients above and below 65 years of age. (See WARNINGS, Myopathy/Rhabdomyolysis.) The efficacy of rosuvastatin in the geriatric population (≥65 years of age) was comparable to the efficacy observed in the non-elderly. **ADVERSE REACTIONS** Rosuvastatin is generally well tolerated. Adverse reactions have usually been mild and transient. In clinical studies of 10,275 patients, 3.7% were discontinued due to adverse experiences attributable to rosuvastatin. The most frequent adverse events thought to be related to rosuvastatin were myalgia, constipation, asthenia, abdominal pain, and nausea. **Clinical Adverse Experiences** Adverse experiences, regardless of causality assessment, reported in ≥2% of patients in placebo-controlled clinical studies of rosuvastatin are shown in Table 1; discontinuations due to adverse events in these studies of up to 12 weeks duration occurred in 3% of patients on rosuvastatin and 5% on placebo.

Table 1. Adverse Events in Placebo-Controlled Studies

Adverse event	Rosuvastatin N=744	Placebo N=382
Pharyngitis	9.0	7.6
Headache	5.5	5.0
Diarrhea	3.4	2.9
Dyspepsia	3.4	3.1
Nausea	3.4	3.1
Myalgia	2.8	1.3
Asthenia	2.7	2.6
Back pain	2.6	2.4
Flu syndrome	2.3	1.8
Urinary tract infection	2.3	1.6
Rhinitis	2.2	2.1
Sinusitis	2.0	1.8

In addition, the following adverse events were reported, regardless of causality assessment, in ≥1% of 10,275 patients treated with rosuvastatin in clinical studies. The events in *italics* occurred in ≥2% of these patients. **Body as a Whole:** *Abdominal pain, accidental injury, chest pain, infection, pain,* pelvic pain, and neck pain. **Cardiovascular System:** *Hypertension,* angina pectoris, vasodilatation, and palpitation. **Digestive System:** *Constipation, gastroenteritis,* vomiting, flatulence, periodontal abscess, and gastritis. **Endocrine:** Diabetes mellitus. **Hemic and Lymphatic System:** Anemia and ecchymosis. **Metabolic and Nutritional Disorders:** *Peripheral edema.* **Musculoskeletal System:** *Arthritis, arthralgia,* and pathological fracture. **Nervous System:** *Dizziness, insomnia, hypertonia, paresthesia, depression,* anxiety, vertigo, and neuralgia. **Respiratory System:** *Bronchitis, cough increased,* dyspnea, pneumonia, and asthma. **Skin and Appendages:** *Rash* and pruritus. **Laboratory Abnormalities:** In the rosuvastatin clinical trial program, dipstick-positive proteinuria and microscopic hematuria were observed among rosuvastatin-treated patients, predominantly in patients dosed above the recommended dose range (i.e., 80 mg). However, this finding was more frequent in patients taking rosuvastatin 40 mg, when compared to lower doses of rosuvastatin or comparator statins, though it was generally transient and was not associated with worsening renal function. (See PRECAUTIONS, Laboratory Tests.) Other abnormal laboratory values reported were elevated creatinine phosphokinase, transaminases, hyperglycemia, glutamyl transpeptidase, alkaline phosphatase, bilirubin, and thyroid function abnormalities. Other adverse events reported less frequently than 1% in the rosuvastatin clinical study program, regardless of causality assessment, included arrhythmia, hepatitis, hypersensitivity reactions (i.e., face edema, thrombocytopenia, leukopenia, vesiculobullous rash, urticaria, and angioedema), kidney failure, syncope, myasthenia, myositis, pancreatitis, photosensitivity reaction, myopathy, and rhabdomyolysis. **Postmarketing Experience** In addition to the events reported above, as with other drugs in this class, the following event has been reported during post-marketing experience with CRESTOR, regardless of causality assessment: very rare cases of jaundice. **OVERDOSAGE** There is no specific treatment in the event of overdose. In the event of overdose, the patient should be treated symptomatically and supportive measures instituted as required. Hemodialysis does not significantly enhance clearance of rosuvastatin. **DOSAGE AND ADMINISTRATION** The patient should be placed on a standard cholesterol-lowering diet before receiving CRESTOR and should continue on this diet during treatment. CRESTOR can be administered as a single dose at any time of day, with or without food. **Hypercholesterolemia (Heterozygous Familial and Nonfamilial) and Mixed Dyslipidemia (Fredrickson Type IIa and IIb)** The dose range for CRESTOR is 5 to 40 mg once daily. Therapy with CRESTOR should be individualized according to goal of therapy and response. The usual recommended starting dose of CRESTOR is 10 mg once daily. However, initiation of therapy with 5 mg once daily should be considered for patients requiring less aggressive LDL-C reductions, who have predisposing factors for myopathy, and as noted below for special populations such as patients taking cyclosporine, Asian patients, and patients with severe renal insufficiency (see CLINICAL PHARMACOLOGY, Race, and Renal Insufficiency, and Drug Interactions. For patients with marked hypercho-lesterolemia (LDL-C >190 mg/dL) and aggressive lipid targets, a 20-mg starting dose may be considered. After initiation and/or upon titration of CRESTOR, lipid levels should be analyzed within 2 to 4 weeks and dosage adjusted accordingly. **The 40-mg dose of CRESTOR is reserved only for those patients who have not achieved their LDL-C goal utilizing the 20 mg dose of CRESTOR once daily (see WARNINGS, Myopathy/ Rhabdomyolysis). When initiating statin therapy or switching from another statin therapy, the appropriate CRESTOR starting dose should first be utilized, and only then titrated according to the patient's individualized goal of therapy.** **Homozygous Familial Hypercholesterolemia** The recommended starting dose of CRESTOR is 20 mg once daily in patients with homozygous FH. The maximum recommended daily dose is 40 mg. CRESTOR should be used in these patients as an adjunct to other lipid-lowering treatments (e.g., LDL apheresis) or if such treatments are unavailable. Response to therapy should be estimated from pre-apheresis LDL-C levels. **Dosage in Asian Patients** Initiation of CRESTOR therapy with 5 mg once daily should be considered for Asian patients. The potential for increased systemic exposures relative to Caucasians is relevant when considering escalation of dose in cases where hypercholesterolemia is not adequately controlled at doses of 5, 10, or 20 mg once daily. (See WARNINGS, Myopathy/ Rhabdomyolysis, CLINICAL PHARMACOLOGY, Special Populations, Race, and PRECAUTIONS, General). **Dosage in Patients Taking Cyclosporine** In patients taking cyclosporine, therapy should be limited to CRESTOR 5 mg once daily (see WARNINGS, Myopathy/Rhabdomyolysis, and PRECAUTIONS, Drug Interactions). **Concomitant Lipid-Lowering Therapy** The effect of CRESTOR on LDL-C and total-C may be enhanced when used in combination with a bile acid binding resin. If CRESTOR is used in combination with gemfibrozil, the dose of CRESTOR should be limited to 10 mg once daily (see WARNINGS, Myopathy/Rhabdomyolysis, and PRECAUTIONS, Drug Interactions). **Dosage in Patients With Renal Insufficiency** No modification of dosage is necessary for patients with mild to moderate renal insufficiency. For patients with severe renal impairment (CL_{cr} <30 mL/min/1.73 m^2) not on hemodialysis, dosing of CRESTOR should be started at 5 mg once daily and not to exceed 10 mg once daily (see PRECAUTIONS, General, and CLINICAL PHARMACOLOGY, Special Populations, Renal Insufficiency).

NOTE: This summary provides important information about CRESTOR. For more information, please ask your doctor or health care professional about the full Prescribing Information and discuss it with them.

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In darkness, the cadaver was taken to the École de Médicine.

been interred in the Cimetière St.-Louis, a small graveyard reserved for foreign-born Protestants.

But the cemetery itself seemed to have vanished. Finally, researchers hired by Porter unearthed old maps that located it along the rue Grange aux Belles in northeastern Paris. When Porter first visited the spot, he was appalled. The graveyard had apparently been closed shortly after Jones' burial, filled in, and built upon. The naval hero now lay somewhere beneath a laundry, a bric-a-brac shop, several ramshackle houses and a shed for the wagons of grain merchants. Amid these structures was a small, rubbish-strewn courtyard.

"Here," the ambassador later recalled, "was presented the spectacle of a hero whose fame once covered two continents . . . relegated to oblivion in a squalid quarter of a distant city, buried in ground once consecrated, but since desecrated by having been used at times as a garden, with the moldering bodies of the dead fertilizing its market vegetables, by having been covered later by a common dump pile, where dogs and horses had been buried, and the soil was still soaked with polluted water from undrained laundries, and, as a culmination of degradation, by having been occupied by a contractor for removing night soil."

Porter was determined to dig for the body at once, but one of his researchers conspired with local property owners to milk the rich American for all he was worth. "Fabulous prices" were demanded for the excavation rights, Porter wrote, and he ultimately had to "drop the matter entirely for a couple of years, to let the excitement subside."

Meanwhile, new impetus for the search was coming from the other side of the Atlantic, where Theodore Roosevelt had become president upon the assassination of William McKinley in 1901. T.R. was not just a lifelong naval history buff—he'd written his first book on the War of 1812 at sea—but had served as assistant secretary of the Navy and was an enthusiastic booster of the modern U.S. Navy, then basking in victories in the Spanish-American War. He immediately saw the propaganda value in a Jones resurrection, and let Porter know that if he wished to resume his quest, the federal government would pick up the bill.

Digging at the rue Grange aux Belles finally began in February 1905. Since the buildings there were not to be demolished, laborers had to dig shafts by hand, shoring them up with timbers as they went and hauling dirt to the surface with buckets and ropes. Almost immediately, they found what was left of the cemetery: reeking, viscous black soil studded with thousands of human bones—and sickeningly alive with enormous red worms. The men worked quickly. Photographs kept by Porter show piles of earth and cobblestones rising next to the laundry and the bric-a-brac shop and, down in the tunnels, skulls jumbled underfoot among heaps of bricks.

The workmen were looking for a leaden coffin: an old letter from an American acquaintance of Jones' who had been in Paris when the captain died said Jones had been buried in one, to preserve his remains in case America ever wished to reclaim them. After two and a half weeks of digging, they unearthed such a coffin, and newspapers reported that Jones had been found—until, the next day, a corroded nameplate on the casket revealed that it contained someone else. Over the next several weeks, other lead coffins would turn up, each bearing an unJonesian name or containing a skeleton of the wrong dimensions.

But, on the last day of March, a lead casket with no nameplate—and of superior workmanship—was found. It was opened in Porter's presence a week later to reveal a body in exceptional condition, apparently because the coffin had been filled with alcohol as a preservative before burial. The corpse was that of a middle-aged man, dressed in a simple linen cap, ruffled shirt and shroud, with his waist-length dark hair gathered up at the neck. In photographs at the Naval Historical Center in Washington, D.C., even the stubble on his chin is visible. One eye appears half open, as if in an eternal wink.

Under cover of darkness, the cadaver was transported to Paris's École de Médicine, where the city's most eminent anthropologists could examine it. They took measurements, performed dissections and, as Porter, his aides and family hovered anxiously, compared the body with known portraits and descriptions of Jones. (Sixty years later, the ambassador's great-nephew recalled, with a shudder, being urged to hold the corpse's "soft and pliable" hand.) At last, the scientists proclaimed their unanimous judgment: it was indeed the object of their quest. The linen cap even bore a monogram that looked like a "J" when held upright, and a "P" when upside down.

Ambassador Porter telegraphed Washington: "My six years' search for remains of Paul Jones has resulted in success."

BUT HOW COULD THE BODY of America's greatest naval hero—a man who enjoyed worldwide fame in his own lifetime—have vanished for more than a century?

That chapter of the story begins in a very different quarter of Paris, along a fashionable Left Bank street called the rue de Tournon. The place today looks much as it must have in the summer of 1792: a row of sandstone facades, neat and formal as an 18th-century engraving, sloping gently toward the Luxembourg Palace. In a third-floor apartment toward the middle of the block, above what is now a rare-book shop, is the room where John Paul Jones died.

His career had taken several turns in the decade since America had won its independence from Britain. When the Revolutionary War ended and the Continental Navy disbanded, Jones found himself turned ashore without a command—an intolerable situation for a born sailor who loved, above all political allegiances, the mingled aromas of salt air and cannon smoke. Moreover, the Scottish-born captain had spent only a few years of his life in America ("the country of my fond election," as he called it) and always felt more at home in Europe. So Jones—

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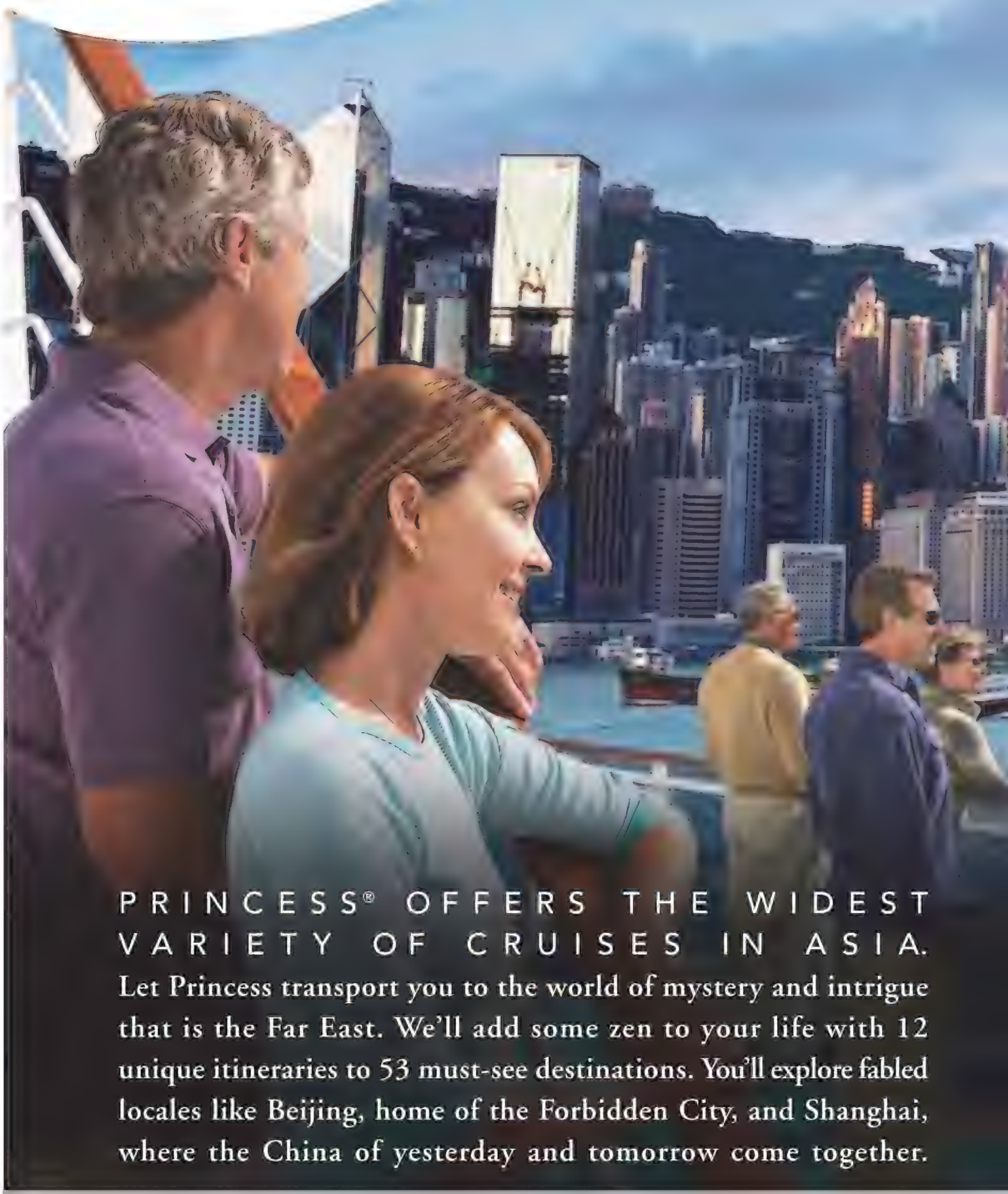

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rather to the embarrassment of some admirers—turned from serving the New World's fledgling republic to serving the Old World's most hardened despotism: he enlisted as rear admiral under Catherine the Great of Russia in her war against the Ottoman Turks. Within a year and a half, though, he left Russia precipitously, after having been implicated in a sexual scandal involving a 12-year-old girl (not the first time his libido had gotten him into trouble ashore). By 1790, Jones was in Paris, hoping that the Colonies' old ally Louis XVI—or perhaps the newly inaugurated President Washington, to whom he also sent an entreating letter—would favor him with a military command.

But the French king, in that year after the fall of the Bastille, had more pressing business to attend to, as did Washington, apparently. So Jones, his health and spirit failing, was left waiting in the rue de Tournon. Gouverneur Morris, the snobbish American minister to France, had little patience with the importunate sailor—a mere gardener's son, by the way—who visited him far too often. "He has nothing to say," Morris wrote snidely in his diary, "but is so kind as to bestow on me all the Hours which hang heavy on his Hands."

Morris' journal entry for July 18, 1792, notes: "A Message from Paul Jones that he is dying. I go thither and make his will." After this tiresome business was complete, the American diplomat hastened off to dinner, and then to call upon his mistress. Finally, later that night, the couple brought a doctor to the rue de Tournon, where they found Jones face-down on the bed, already turning cold.

Although the unmarried and childless Jones was far from impoverished at the time of his death, Morris decided that he should be buried "in a private and economical manner." A French admirer ended up footing the bill for a respectable funeral, but it was hardly a send-off worthy of a world-renowned hero. The cortege wound its way through Paris, passing beneath the Porte St.-Martin and up a steep country lane toward the little Protestant cemetery. Despite the upheavals of the French Revolution—Louis was himself just six months away from the guillotine—an official state delegation paid its respects at the brief service. A few Americans who happened to be in Paris also turned up. Morris was too busy with preparations for a dinner party he was hosting that night.

Several weeks later—several weeks too late—a letter addressed to "John Paul Jones a citizen of the United States" arrived in Paris. President Washington had appointed him to a diplomatic post in the service of his adopted homeland.

HOW DIFFERENT was Jones' next public procession through Paris, in the summer of 1905, along the Avenue de l'Alma and the Champs Élysées. Resplendent battalions of French cavalry and infantry accompanied the coffin, along with high government officials and diplomatic staff. Hundreds of American sailors and marines in dress uniforms, including an honor guard handpicked for their height and good looks, also marched proudly. (Spectators thronged the streets, and Porter noted with satisfaction how the French ladies, when these bluejackets passed, exclaimed, "*Quels beaux garçons!*")

President Roosevelt, in his delight at Porter's success, had dispatched an entire squadron of American warships across the Atlantic to receive the body. "I have never seen so many flags—big ones, little ones, French, American—all fluttering in the breeze," an eyewitness recalled in the 1970s.

Jones' Annapolis memorial service was more splendid still. On April 24, 1906, much of Congress, the cabinet and the diplomatic corps gathered at the Naval Academy armory, along with French and American naval squadrons, the entire corps of midshipmen and thousands of onlookers. Looming above a casket at a flag-draped stage, Roosevelt hailed Jones' "indomitable determination and dauntless scorn of death" and seized the opportunity to address current politics. "Those of you who are in public life have a moral right to be here at this celebration today only if you are prepared to do your part in building up the Navy of the present," T.R. declared in trademark style, flashing his teeth and thumping the podium.

Porter, too, eulogized the hero he had brought home. "His honored remains will be laid to rest in this historic spot in a mausoleum befitting his fame, but his true sepulcher will be the hearts of his countrymen," he told the assembled throng.

Yet amid all the hoopla, murmurs of skepticism were already audible. "There are many doubting Thomases who are not satisfied with the identification" of Jones' remains, *The Literary Digest* editorialized in its July 29, 1905, issue.

At least one such Thomas could be found in T.R.'s own cabinet. After Jones' return to America but before the commemoration, Secretary of the Navy Charles Bonaparte sent one of his aides to ask acting Secretary of State Alvey Adee for an independent autopsy before reburial. Hearing this request, the aide later recalled, Adee leapt up and ran into Bonaparte's office, from which "a strange bellowing sound" shortly emerged. As soon as the acting secretary of state had departed, the aide continued, Bonaparte "called me in to his office, and said that he had decided not to have any examination of Jones' body made at this time."

Several years later, art historians Charles Henry Hart and Edward Biddle published the most thorough attack yet on Porter's methods. They revealed that one of the two life busts of Jones by Jean Antoine Houdon that the French scientists had used for comparison with the corpse was not a portrait of Jones at all. As for the other, indisputably genuine bust, Porter's team had made much of the fact that its dimensions almost precisely fit the corpse's—perhaps too much, since Houdon was an artist, not an anatomist, and would not necessarily have strived for an exact match. Moreover, Hart and Biddle questioned the accuracy of the biography of Jones from which Porter had drawn his physical descriptions.

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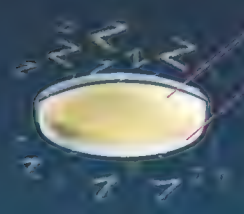

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Please see important patient information on adjoining page.

* Void where prohibited by law.
** Not actual pill size.
† Effective for up to 7 hours in clinical studies.
†† Individual results may vary.

AMBIEN CR is indicated for the treatment of insomnia. AMBIEN CR is one of many treatment options, in addition to lifestyle changes, that you and your doctor can consider. Until you know how AMBIEN CR will affect you, you shouldn't drive or operate machinery. Side effects may include next-day drowsiness, dizziness and headache. You shouldn't take it with alcohol. All sleep medicines carry some risk of dependency. Do not use sleep medicines for extended periods without first talking to your doctor. Be sure you're able to devote 7 to 8 hours to sleep before you need to be active again.

AMBIEN CR™
(ZOLPIDEM TARTRATE EXTENDED RELEASE) Ⓒ
6.25-MG & 12.5-MG EXTENDED RELEASE TABLETS

Tomorrow will thank you.™

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Ambien CR™ ℞

(zolpidem tartrate extended-release tablets)

INFORMATION FOR PATIENTS TAKING AMBIEN CR

Your doctor has prescribed Ambien CR to help you sleep. The following information is intended to guide you in the safe use of this medicine. It is not meant to take the place of your doctor's instructions. If you have any questions about Ambien CR tablets be sure to ask your doctor or pharmacist.

Ambien CR is used to treat different types of sleep problems, such as:

- trouble falling asleep
- waking up often during the night

Some people may have more than one of these problems.

Ambien CR belongs to a group of medicines known as the "sedative/hypnotics", or simply, sleep medicines. There are many different sleep medicines available to help people sleep better. Sleep problems are usually temporary, requiring treatment for only a short time, usually 1 or 2 days up to 1 or 2 weeks. Some people have chronic sleep problems that may require more prolonged use of sleep medicine. However, you should not use these medicines for long periods without talking with your doctor about the risks and benefits of prolonged use.

SIDE EFFECTS

Most common side effects:

- headache
- somnolence (sleepiness)
- dizziness

You may find that these medicines make you sleepy during the day. How drowsy you feel depends upon how your body reacts to the medicine, which sleep medicine you are taking, and how large a dose your doctor has prescribed. Daytime drowsiness is best avoided by taking the lowest dose possible that will still help you sleep at night. Your doctor will work with you to find the dose of Ambien CR that is best for you.

To manage these side effects while you are taking this medicine:

- When you first start taking Ambien CR or any other sleep medicine until you know whether the medicine will still have some carryover effect in you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
- NEVER drink alcohol while you are being treated with Ambien CR or any sleep medicine. Alcohol can increase the side effects of Ambien CR or any other sleep medicine.
- Do not take any other medicines without asking your doctor first. This includes medicines you can buy without a prescription. Some medicines can cause drowsiness and are best avoided while taking Ambien CR.
- Always take the exact dose of Ambien CR prescribed by your doctor. Never change your dose without talking to your doctor first.

SPECIAL CONCERNS

There are some special problems that may occur while taking sleep medicines.

Memory problems: Sleep medicines may cause a special type of memory loss or "amnesia." When this occurs, a person may not remember what has happened for several hours after taking the medicine. This is usually not a problem since most people fall asleep after taking the medicine.

Memory loss can be a problem, however, when sleep medicines are taken while traveling, such as during an airplane flight and the person wakes up before the effect of the medicine is gone. This has been called "traveler's amnesia."

Be sure to talk to your doctor if you think you are having memory problems. Although memory problems are not very common while taking Ambien CR, in most instances, they can be avoided if you take Ambien CR only when you are able to get a full night's sleep (7 to 8 hours) before you need to be active again.

Tolerance: When sleep medicines are used every night for more than a few weeks, they may lose their effectiveness to help you sleep. This is known as "tolerance". Sleep medicines should, in most cases, be used only for short periods of time, such as 1 or 2 days and generally no longer than 1 or 2 weeks. If your sleep problems continue, consult your doctor, who will determine whether other measures are needed to overcome your sleep problems.

Dependence: Sleep medicines can cause dependence, especially when these medicines are used regularly for longer than a few weeks or at high doses. Some people develop a need to continue taking their medicines. This is known as dependence or "addiction."

When people develop dependence, they may have difficulty stopping the sleep medicine. If the medicine is suddenly stopped, the body is not able to function normally and unpleasant symptoms may occur (see *Withdrawal*). They may find that they have to keep taking the medicines either at the prescribed dose or at increasing doses just to avoid withdrawal symptoms.

All people taking sleep medicines have some risk of becoming dependent on the medicine. However, people who have been dependent on alcohol or other drugs in the past may have a higher chance of becoming addicted to sleep medicines. This possibility must be considered before using these medicines for more than a few weeks.

If you have been addicted to alcohol or drugs in the past, it is important to tell your doctor before starting Ambien or any sleep medicine.

Withdrawal: Withdrawal symptoms may occur when sleep medicines are stopped suddenly after being used daily for a long time. In some cases, these symptoms can occur even if the medicine has been used for only a week or two.

In mild cases, withdrawal symptoms may include unpleasant feelings. In more severe cases, abdominal and muscle cramps, vomiting, sweating, shakiness, and rarely, seizures may occur. These more severe withdrawal symptoms are very uncommon.

Another problem that may occur when sleep medicines are stopped is known as "rebound insomnia." This means that a person may have more trouble sleeping the first few nights after the medicine is stopped than before starting the medicine. If you should experience rebound insomnia, do not get discouraged. This problem usually goes away on its own after 1 or 2 nights.

If you have been taking Ambien CR or any other sleep medicine for more than 1 or 2 weeks, do not stop taking it on your own. Always follow your doctor's directions.

Changes in behavior and thinking: Some people using sleep medicines have experienced unusual changes in their thinking and/or behavior. These effects are not common. However, they have included:

- more outgoing or aggressive behavior than normal
- confusion
- strange behavior
- agitation
- hallucinations
- worsening of depression
- suicidal thoughts

How often these effects occur depends on several factors, such as a person's general health, the use of other medicines, and which sleep medicine is being used.

It is also important to realize that it is rarely clear whether these behavior changes are caused by the medicine, an illness, or occur on their own. In fact, sleep problems that do not improve may be due to illnesses that were present before the medicine was used. If you or your family notice any changes in your behavior, or if you have any unusual or disturbing thoughts, call your doctor immediately.

Pregnancy: Sleep medicines may cause sedation of the unborn baby when used during the last weeks of pregnancy.

Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking Ambien CR.

SAFE USE OF SLEEPING MEDICINES

To ensure the safe and effective use of Ambien CR or any other sleep medicine, you should observe the following cautions:

1. Ambien CR is a prescription medicine and should be used ONLY as directed by your doctor. Follow your doctor's instructions about how to take, when to take, and how long to take Ambien CR. Ambien CR tablets should not be divided, crushed, or chewed, and must be swallowed whole.
2. Never use Ambien CR or any other sleep medicine for longer than directed by your doctor.
3. If you notice any unusual and/or disturbing thoughts or behavior during treatment with Ambien CR or any other sleep medicine, contact your doctor.
4. Tell your doctor about any medicines you may be taking, including medicines you may buy without a prescription. You should also tell your doctor if you drink alcohol. DO NOT use alcohol while taking Ambien CR or any other sleep medicine.
5. Do not take Ambien CR unless you are able to get a full night's sleep before you must be active again. For example, Ambien CR should not be taken on an overnight airplane flight of less than 7 to 8 hours since "traveler's amnesia" may occur.
6. Do not increase the prescribed dose of Ambien CR or any other sleep medicine unless instructed by your doctor.
7. When you first start taking Ambien CR or any other sleep medicine, until you know whether the medicine will still have some carryover effect in you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
8. Be aware that you may have more sleeping problems the first night after stopping Ambien CR or any other sleep medicine.
9. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking Ambien CR or any other sleep medicine.
10. As with all prescription medicines, never share Ambien CR or any other sleep medicine with anyone else. Always store Ambien CR or any other sleep medicine in the original container that you received it in and store it out of reach of children.
11. Ambien CR works very quickly. You should only take Ambien CR right before going to bed and are ready to go to sleep.

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Ambien CR™ ℞

(zolpidem tartrate extended-release tablets)

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AMBCR-Sept05-PIL-Aa

Journalists showed up at Porter's door; he refused to comment.

FRANCE BID JONES A GRAND FAREWELL IN 1905 (U.S. TROOPS PASS THE CATAFALQUE BEARING HIS BODY), BUT SOON THERE WERE SKEPTICAL MURMURS.

GRANGER COLLECTION, NEW YORK

for a response—he had returned by then to New York City—he at first refused to comment, then gave a terse rebuttal to Hart and Biddle's points. Meanwhile, another writer suggested sarcastically that the tomb of the "unknown French gentleman" in Annapolis should bear the following inscription, in parody of Shakespeare's famous epitaph:

Good friend, for Porter's sake, forbear
To doubt the dust inclosed here.
Blest be the man that got these bones,
And curst be he that says "'tain't Jones."

ONE AFTERNOON NOT LONG AGO, I made my way through the streets of Paris toward rue Grange aux Belles. I knew that the rue de Tournon house where Jones had died was still intact, but I had no idea what I would find at the spot where he spent the next hundred years.

The first signs were encouraging. The little street still rises in a lazy uphill curve, reminiscent of the country road it had been in 1792. And as in 1905, the quarter remains unfashionable, with office-supply shops, cheap jazz bars and florists specializing in plastic funeral wreaths. My hopes lifted even higher as I recognized the somber gray bulk of the 17th-century Hôpital St.-Louis on my right.

Then I rounded the curve and saw the site of numbers 43, 45 and 47. The corner bar across the street was still intact, exactly as I'd glimpsed it in some of Porter's photographs—but the laundry, curiosity shop and wagon shed were gone, obliterated by a 12-story apartment building with an underground garage.

So if Horace Porter did get the wrong man, there is not much hope now that the right one could ever be found. The question is: How much faith should we have in his research, and in the forensic science of a century ago?

In 2004, Nikki Rogers, a physical anthropologist at Wright State University in Dayton, Ohio, published a scholarly article on the identification techniques Porter's medical experts used. "As a scientist, I had to be open to the possibility that they were wrong," she says. But in her judgment, this part of the team's work still holds up. For instance, based on microscopically enlarged photos of the corpse's organ tissues, the scientists were correct in identifying kidney failure as a probable cause of death. That diagnosis squares with descriptions of Jones' final illness, as well as with the recurring tropical fever that he contracted in his youth.

And some of Porter's methods, such as superimposing a photo of the cadaver's head over one of the Houdon busts—were ahead of their time. "I've documented that this was the first use of photo-facial superimposition," Rogers says of a technique still widely practiced today. "There's not one misstep in the case," she maintains. "Everything matches."

Yet Porter's surviving papers, most of which are in the Library of Congress, reveal some disturbing contradictions. For instance, in 1899, before excavations began, he proclaimed: "There is absolute proof that John Paul Jones was buried in a leaden coffin which undoubtedly bears a plate with his name." But in 1911 he told an interviewer: "I really did not expect to find any name plate, certainly not an engraved one, on John Paul Jones' coffin."

Moreover, Porter appears to have relied, at least partly, on

One possible test has not been tried—and may never be.

"HE DESERVES HIS REST," SAYS A SCIENTIST WHO STUDIED THE CASE OF THE QUESTIONED REMAINS (INTERRED IN 1913 IN THIS NAVAL ACADEMY CRYPT).

some seriously flawed evidence. While Hart and Biddle questioned the Jones biography that he used, the great naval historian Samuel Eliot Morison later showed it to be little more than a soufflé of "fictions and forgeries." Porter's researchers trusted it on such crucial facts as Jones' physical stature; Morison noted that "the description of Jones himself, especially his height of 5 ft. 7 inches, [was] a pure invention."

As for the weight Rogers accords the Houdon bust, art historians say that no one should assume—as Porter did—that its measurements ought to match those of Jones' actual head. "Sculptors, especially great ones, don't usually obey the actual proportions," says Nicholas Penny, a senior curator of sculpture at the National Gallery of Art and an authority on Houdon. He suggests that even though Houdon was known to take measurements, and sometimes even life masks, of his portrait subjects (a central point in Rogers' argument), it may have been an element of showmanship as much as anything else.

Porter's documentary research, pinpointing the place and circumstances of Jones' burial, has been reconfirmed by later biographers. And Smithsonian physical anthropologist Douglas Owsley, an expert on historic burials, notes that "it isn't common at all" to find 18th-century remains sealed in a lead coffin filled with alcohol: "I can imagine them doing something like that for a very prestigious individual, if they thought they might be transporting him to his original home."

Yet it bears pointing out that a cemetery set aside for foreign Protestants in Paris—which was, after all, Europe's most cosmopolitan capital in the 18th century—could have contained many such individuals. And while Porter, in his written accounts, insisted that his workmen dug and probed for lead coffins so thoroughly that they could not possibly have missed any, there is no independent proof that they did not. Certainly, the fact that the cemetery lay beneath a built-up city block suggests that they could not easily have explored it completely. Moreover, Rogers acknowledges that it is unfortunate that Porter seems to have made no photographs or sketches of important pieces of evidence, such as the supposed monogram on the linen cap.

One last possible means of proof has not been pursued—and perhaps never will be.

In a dingy display case in the U.S. Naval Academy Museum, a stone's throw from Jones' crypt, sits a gold-framed miniature portrait of the man painted circa 1780 by an admiring Frenchwoman. On its reverse side, surrounding the entwined initials "JPJ," is a plaited brown circlet: a lock of Jones' hair. If the sarcophagus were ever opened, could the DNA of the hair be compared with the DNA of the corpse?

"It's a fascinating thought," says James Cheevers, the museum's senior curator, when I suggest this. Still, he's not optimistic that such testing will come to pass, especially given Jones' status among academy alumni: "I'm sure the superintendent of the Naval Academy wouldn't extend that permission without going to the highest levels of the Navy, and perhaps even beyond, considering the reverence involved."

Nikki Rogers, however, lights up at the suggestion. "I'd love to find out," she says. "But then again, he deserves his rest. He's been through a lot."

ADAM GOODHEART, the C.V. Starr Scholar at Washington College in Chestertown, Md., writes often on American history.

MATTHEW S. GUNBY / AP / WIDE WORLD PHOTOS

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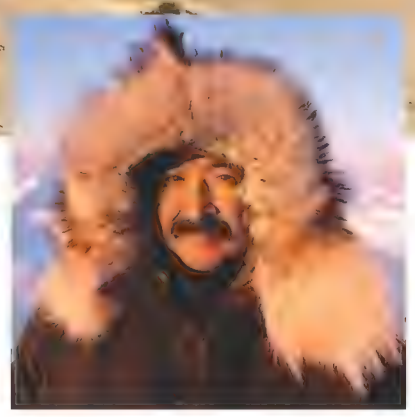
THE SHAPE OF THINGS TO COME? RISING TEMPERATURES HAVE MADE TINY SHISHMAREF VULNERABLE TO POWERFUL STORMS (UNTIL 1998, A HOUSE STOOD ON THE BEACH BELOW). VILLAGERS (INSET, TONY WEYIOUANNA) PLAN TO LEAVE THE ISLAND.

A STRUGGLE TO STAY AFLOAT

IN THE CHILLING REALITY OF A WARMING ARCTIC, ALASKAN VILLAGERS ARE FIGHTING A BATTLE TO SAVE THEIR COMMUNITY AND WAY OF LIFE



ASHLEY COOPER / PICIMPACT / CORBIS; BRYAN & CHERRY ALEXANDER PHOTOGRAPHY

SHISHMAREF, an Eskimo village on an island off northwestern Alaska, is falling into the ocean. Giant storm surges have so battered the place—once well protected by sea ice—that villagers voted in 2002 to leave their ancestral home for the mainland. They are being called one of the first refugees of global warming.

"We tend to describe climate change in terms that are abstract—a one degree rise in temperature, an increase in greenhouse gases—but when waves wash away a village, that's concrete and very emotional," says Igor Krupnik, an anthropologist at the National Museum of Natural History (NMNH) and curator of a new exhibition about global warming's effects on Arctic peoples, "Arctic: A Friend

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Acting Strangely." "When they lose a piece of their land, they aren't just losing a certain number of square miles. They are losing part of their history and their memory. They are losing childhood events and grandparents' tales."

Shishmaref sits on an island only a quarter of a mile across and two and a half miles long north of the Bering Strait off Alaska's Seward Peninsula. Before temperatures began to rise there about 30 years ago, 20 to 30 miles of hard sea ice buffered Shishmaref from powerful fall storms. But Natives and scientists alike say the ice doesn't freeze as solidly or as soon as it used to and now stretches only six or seven miles, leaving the community of 600 people more exposed. Storms have swept houses and a school playground into the ocean.

The villagers' plan is to relocate to Tin Creek, a site on the Alaska mainland 12 miles away, and they have appealed to state and local authorities to pick up the estimated $180 million cost. Residents hope that in their new community they'll be able to maintain their close ties and continue hunting seals and walruses, and keep fishing, much as their ancestors have done for centuries. "People are asking why [the government] should be spending so much money on so few people," said Shishmaref native Tony Weyiouanna. "But people here in Alaska are like everyone else. We want to keep our culture alive." Residents have received $4.25 million for a road to Tin Creek, but Weyiouanna says he is not optimistic that the community will get all the funding it needs to rebuild.

BARRIERS BUILT TO PROTECT THE TOWN (A 2002 AERIAL VIEW) FAILED, AND FELL INTO THE SEA.

Overall, NASA says, the year 2005 was the hottest in a century, and though some experts disagree over how much carbon dioxide emissions contribute to global warming, they agree the Arctic is feeling the burn more than anyplace else. And the Arctic's problems are worsening: as rising temperatures melt ice and snow, newly exposed land and seawater absorb even more sunlight, increasing temperatures further, and so on. NASA climatologist James Hansen, who has publicly accused Bush administration officials of trying to suppress evidence of global warming, says most of last year's record heat reflects increases in the Arctic, which was three degrees warmer than usual.

Anthropologist William Fitzhugh, director of the Smithsonian's Arctic Studies Center, says Shishmaref's plight is bad news, if only because Arctic ice and snow help air-condition the planet. "They are canaries in the coal mine," he says of the town's soon-to-be displaced residents.

For his part, Weyiouanna says, "The annihilation of our way of life due to global warming is something we would like to avoid. Nobody wants to be the canary." *—JENNIFER DRAPKIN*

"Arctic: A Friend Acting Strangely" opens April 15 at NMNH.

ALL JAZZED UP

Miles Davis, the legendary trumpeter and composer, wore it for a career-capping performance at the Montreux Jazz Festival in Switzerland in 1991, a few months before he died of a stroke at age 65. The boldly colored Versace suit has geometric patterns reminiscent of a Mondrian painting. It is among a cache of Davis memorabilia to be donated by his estate to the National Museum of American History at a March 30 ceremony kicking off National Jazz Appreciation Month. Other items include orchestrations for *Porgy and Bess* and *Sketches of Spain*, two recordings that Davis made with his friend the arranger Gil Evans. "Miles Davis was one of the most important figures in the evolution of jazz music ever," recalls David N. Baker, a founding director of the Smithsonian Jazz Masterworks Orchestra, which celebrates its 15th anniversary this month. "Miles broke the mold." *—BETH PY-LIEBERMAN*

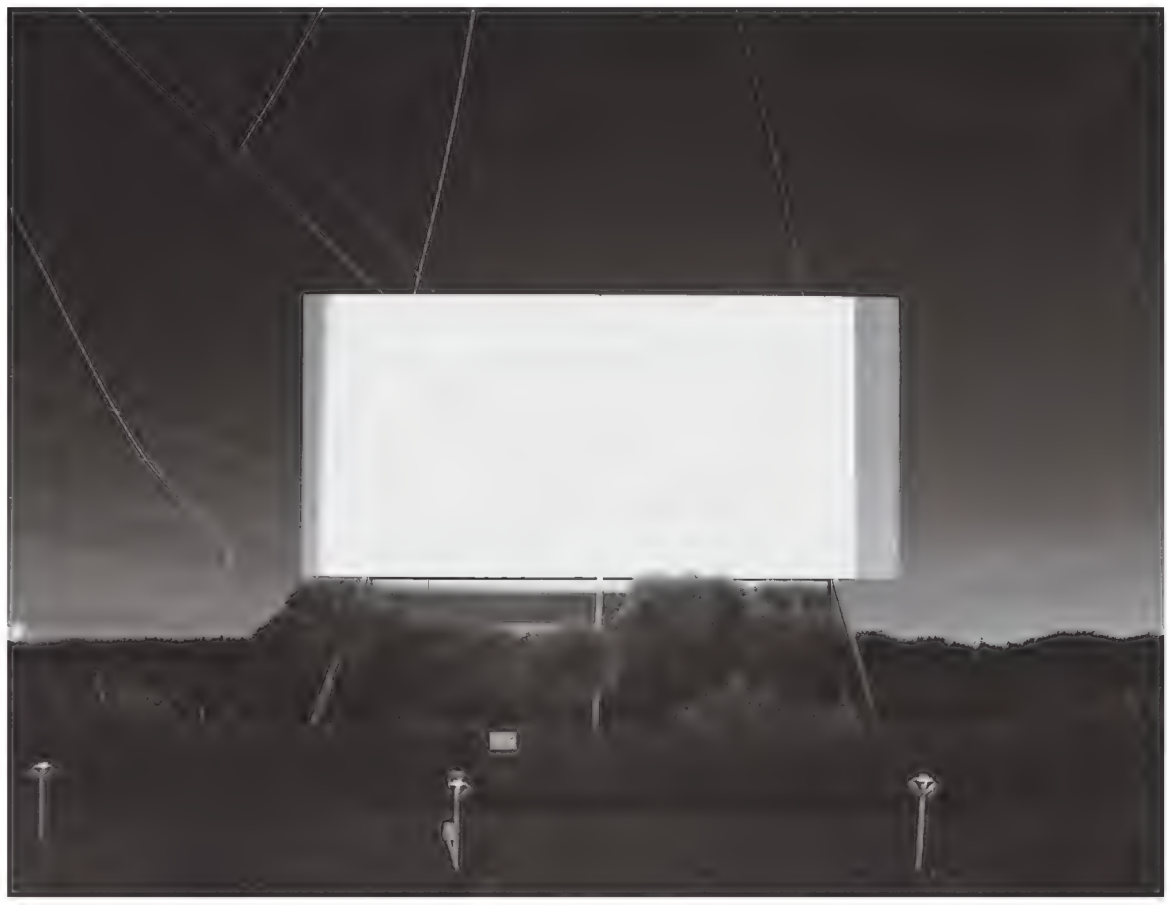
BIRTH OF THE COOLEST: MILES DAVIS (IN 1955 AT AGE 29) WAS "AT THREE DIFFERENT TIMES IN HIS LIFE IN THE VANGUARD OF A NEW MOVEMENT IN JAZZ," SAYS BAKER.

LAURA RAUCH / AP / WIDE WORLD PHOTOS; MARVIN KONER / CORBIS

Exposed

How Sugimoto's mind-bending photography began with a sexual awakening at the movies

Hiroshi Sugimoto's enigmatic black-and-white photographs tease, whether they focus on the imperceptible line between ocean and sky on a misty day or a seemingly alive stuffed polar bear in a museum diorama. The largest retrospective of Sugimoto's influential 30-year career is at the Smithsonian's Hirshhorn Museum and Sculpture Garden until May 14, with a companion exhibition open through July 30 at the Arthur M. Sackler Gallery. The Japanese-born photographer, who is 58 and lives in New York City, spoke with SMITHSONIAN*'s Jennifer Drapkin:*



SUGIMOTO (INSET) EXPERIMENTS WITH TIME, PLAYING WITH CONVENTIONS OF STILL PHOTOGRAPHY. IN HIS *UNION CITY DRIVE-IN*—A TWO-HOUR EXPOSURE—SOME LINES ARE STARS; OTHERS, AIRPLANES.

It has been said you condense the life of an object into a single image.

I accept most interpretations of my art. I wouldn't say they are wrong, except with the dioramas. People miss the point completely and think it is nature photography. They think that I am the world's finest nature photographer.

You once took your camera into a movie theater and photographed Audrey Hepburn on the screen. Why?

As a high-school kid, I fell in love with her and wanted her picture. For the first time, I became sexually aware of myself.

And 20 years later, you started photographing full-length features [by leaving the shutter open during an entire movie]. Is there a connection?

I'm a self-trained photographer. In earlier photographs, I tried to make the movie stop in my pictures. A movie is 19 images per second. I had to photograph at one-thirtieth of a second, in synchrony with the movie. I was a kind of scientist, learning about the nature of film. And that led distantly to my desire to try to capture a whole movie. But it all started with sex.

You once wrote that life is like one long exposure. What did you mean by that?

Your eyes open when you are born, and then the first light comes in. You begin to wonder what this world is. And you keep wondering and wondering and wondering until you die. And then it goes black . . . or white. That to me is one long exposure.

Tell me about your long-exposure photograph—Union City Drive-In.

It is located next to the San Diego Airport. Even in the nighttime it is not so dark. The light above the horizon is the light coming up from the city, not the sunset. You can see the first row of the drive-in, and it is always empty. Most people park far away from the movie screen. There's kissing and necking, sometimes the cars are shaking. Only half the people come to drive-ins to watch the movie. It's sexy, like Audrey Hepburn.

HURRY IN

A little teapot short and stout with—an albatross on its handle? Joe and Georgia Pozycinski's bird-topped bronze homage to Coleridge's "Rime of the Ancient Mariner" is among the wares at the Smithsonian Craft Show, April 20 to 23, at the National Building Museum in Washington, D.C. Proceeds support Smithsonian research.

A $950 TEAPOT IS ALL FORM AND NO FUNCTION: IT CAN'T HOLD TEA.

VISIT THE SMITHSONIAN For a free Associates' planning packet, call Smithsonian Information, 202-357-2700 or 202-357-1729 (TTY), 9 a.m.-5 p.m., Monday through Saturday, or send an e-mail to info@si.edu. **INFORMATION CENTER:** Upon arrival, stop at the Smithsonian Information Center in the Castle (9 a.m.-5:30 p.m.). Members are invited to drop by the reception desk (9 a.m.-4 p.m.) to register for a behind-the-scenes tour and to hear about membership benefits. Most museums are open daily, 10 a.m.-5:30 p.m., except December 25.

HIROSHI SUGIMOTO / HIRSHHORN MUSEUM, S.I.; KALAENE JENS / DPA / LANDOV; JOSEPH POZYCINSKI / SMITHSONIAN CRAFT SHOW

THIS MONTH IN HISTORY

APRIL ANNIVERSARIES—MOMENTOUS OR MERELY MEMORABLE

45 YEARS AGO:
THE BAY OF PIGS FIASCO
April 17, 1961: With President Kennedy's approval, Cuban exiles land on Cuba's coast to overthrow Fidel Castro. The British media predict a "major disaster for the U.S." if the invasion fails. It does. Castro's army quickly quells the raid. The botched attack foreshadows the Cuban missile crisis, and nuclear poker, 18 months later.

940 YEARS AGO: EVIL OMEN
Observers in Asia are the first to see the "broom-like vapor" of Halley's Comet on April 3, 1066. It isn't long before people in Europe see it too. The British are terrified, believing it to be a bad omen (Bayeux Tapestry, left). Later that year, King Harold II of England dies in battle.

25 YEARS AGO: LIFTOFF!
America launches its first space shuttle, *Columbia*, on April 12, 1981. The Soviet Union, wary of the much-heralded event, calls *Columbia* a "creature" of the Pentagon and accuses the United States of "projecting the arms race into outer space." Thousands of Americans gather near Cape Canaveral to watch the first reusable spacecraft, and the historic launch, says one, is "Great! Great! Great!" In 2003, *Columbia* will disintegrate during reentry after 28 missions, killing everyone on board.

50 YEARS AGO: REGAL GRACE
Having kissed a few Hollywood princes—Clark Gable, Cary Grant, Bing Crosby—Grace Kelly finds the real deal in the tiny principality of Monaco. After 11 films and one Oscar, Kelly marries Prince Rainier III on April 19, 1956. The couple will have three children: Caroline, now 49; Albert II, 48; Stephanie, 41. In September 1982, Princess Grace, 52, dies in a car crash in Monaco.

20 YEARS AGO: DEADLY DISASTER
On April 26, 1986, a massive explosion blows the roof off a reactor at the Chernobyl nuclear power plant in Ukraine, spewing more radioactivity than the Hiroshima and Nagasaki atomic bombs combined. Some 135,000 people are evacuated from within an 18-mile radius of the plant, an "exclusion zone" that remains one of the most radioactive spots on earth. The plant continues operations until international pressure forces it to close in December 2000. Today, millions continue to suffer from the man-made disaster.

75 YEARS AGO:
AERIAL WONDER
Calling the feat "the most normal thing in the world," Ruth Nichols flies 210.6 miles an hour over a closed course and sets a new airspeed record for women on April 13, 1931. A year later, the former socialite will become the first female airline pilot. In 1958, Nichols sets her final record by flying an Air Force jet faster than 1,000 miles an hour at an altitude of 51,000 feet. She will die in 1960 at age 59.

—*CHAI WOODHAM*

THREE LIONS / HULTON ARCHIVE / GETTY IMAGES; NASA; AFP / GETTY IMAGES; BETTMANN / CORBIS; VICTOR DRACHEV / EPA / CORBIS; HULTON ARCHIVE / GETTY IMAGES

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APRIL 2006 VOLUME 37, NUMBER 1

GRACE UNDER FIRE

As San Francisco burned, 100 years ago this month, a hardy band of men worked feverishly to save the city's mint—and with it the U.S. economy **BY MICHAEL CASTLEMAN**

SIX WEEKS AFTER THE 1906 QUAKE AND FIRES, MUCH OF SAN FRANCISCO WAS STILL IN RUINS. ESTIMATES OF THE TEMBLOR'S STRENGTH VARY FROM 7.7 TO 8.3.

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LIKE A DOG SHAKING A RAG DOLL, the most destructive earthquake in American history shook San Francisco at 5:12 a.m. on April 18, 1906. It ruptured gas lines and ignited dozens of fires, many of which soon merged into the disaster's single largest blaze. Eyewitnesses estimated that this "fire fiend," as one observer called it, reached 20 stories high. Its temperature exceeded 2,000 degrees, hot enough to melt steel.

With its water mains damaged by the quake, the city surrounded on three sides by water found itself unable to quench the flames, which burned out of control for three days. By the time the last embers were finally out, five square miles had been incinerated, some 28,000 buildings were destroyed, and an estimated 3,000 people were dead.

On that first morning 100 years ago, thousands of dazed San Franciscans—shaken by the earthquake and choked by smoke—grabbed what they could and fled for their lives. They caught ferries across the bay to Oakland or made their way to hastily established refugee camps in Golden Gate Park and around the edges of the city.

But right in the path of the largest, hottest blaze, a few dozen men at the San Francisco Mint, where coins were manufactured for circulation, stood fast. Led by a political appointee with no experience in crisis management, they fought back against an inferno that melted the glass in the

mint's windows and burned the clothes off their backs. They didn't consider themselves heroes; their accounts of that hellish day are remarkably matter-of-fact. But heroes they were, brave and a bit lucky. Although their story is largely forgotten, by safeguarding gold and silver worth $300 million—the equivalent of more than $6 billion today—they may have saved the U.S. economy from collapse.

AT THE TIME GOLD was first discovered near Sacramento in 1848, California was a collection of sleepy Mexican villages with a population of 15,000. Barely two years later, when California entered the Union as the 31st state, its population had soared to nearly 100,000.

But the new state's development was hampered by monetary chaos. Small transactions were handled by barter; for larger ones, gold dust was the leading medium of exchange. As hordes of gold seekers flooded the Golden State, legal tender also included Mexican reals, French louis d'ors, Dutch guilders, English shillings, Indian rupees, and U.S. dollars and coins struck by some 20 private mints. These mints sprang up to handle the bags of nuggets that came down from the diggings to San Francisco, the state's financial and population center. "It was clear," says Charles Fracchia of the San Francisco Museum and Historical Society, "that California needed standardized currency."

To end the confusion, Congress authorized a U.S. mint in San Francisco to begin operation in 1854. Within a year the tiny mint—just 60 square feet—had turned $4 million worth of gold bullion into U.S. coins. When tons of silver began pouring into San Francisco after the discovery of Nevada's Comstock Lode in 1859, the Treasury Department needed a larger mint. It acquired a city block in a rundown neighborhood of boarding houses, cheap hotels and tenement apartments—built, like most of San Francisco, of wood.

The mint that would rise on the site, then known as the New Mint, was designed by Alfred B. Mullett, architect of the Old Executive Office Building in Washington, D.C. The building, inspired by Greek temples, opened in 1874: "The fire department," exulted the daily San Francisco *Call*, "will have little trouble quenching any conflagration that may arise within its walls." With a price tag of $2.1 million—which wouldn't buy half the land under it today—the stately three-story edifice was constructed around a large central courtyard with a well, and featured granite stairs rising from the street to a dramatic portico with fluted sandstone columns. Inside, the rooms boasted marble fireplaces and Honduran mahogany woodwork. Elaborate iron railings lined the interior stairs. The entire building sat on a granite-and-concrete foundation five feet deep, designed to keep thieves from tunneling into the vaults. Although little beyond the base and the outdoor staircase was granite, someone dubbed the building the Granite Lady, and the name stuck.

The New Mint's grandeur contrasted sharply with the dilapidation of the surrounding tenements. But the building's location in a working-class neighborhood was fitting: the mint, after all, was an industrial building, a factory that churned out money. By 1880, the Granite Lady was producing 60 percent of U.S. gold and silver coins, and until the Fort Knox depository opened in 1937, its vaults would hold fully a third of the country's gold reserves.

PEOPLE GATHERED IN HORROR AND DISBELIEF AS FLAMES AND SMOKE SWALLOWED DOWNTOWN SAN FRANCISCO. THE FIRE, WHICH TOOK THREE DAYS TO BRING UNDER CONTROL, CONSUMED SOME 28,000 BUILDINGS.

ARNOLD GENTHE / FROM AFTER THE RUINS, *1906 AND 2006:* REPHOTOGRAPHING THE SAN FRANCISCO EARTHQUAKE AND FIRE, *UNIVERSITY OF CALIFORNIA PRESS AND THE FINE ARTS MUSEUM OF SAN FRANCISCO*

A FEW DOZEN of the mint's 150 employees had worked the overnight shift. Their workday was winding down just before sunrise on April 18. In a letter to his brother three weeks later, one of them, Joe Hammill, recalled being suddenly "thrown in every direction." The quake toppled much of the mint's furniture, but thanks to its thick stone foundation, unusual among early 20th-century San Francisco buildings, the structure itself suffered no significant damage.

Shortly after the shaking stopped, the crew spotted fires springing up in the tenements around them. Night supervisor T. W. Hawes instructed the men to close and lock the iron security shutters on the mint's ground-floor windows, normally left slightly open to admit light. To keep the blazes away from the mint's wooden window frames and other potential points of entry, Hawes ordered the men to remove everything flammable from around the building's exterior, and to use water from the courtyard well to extinguish any encroaching fires.

The well was an uncommon feature among San Francisco's major buildings. And in a stroke of astonishing good luck, just ten days before the quake plumbers had completed installing internal fire hoses around the building—a recent construction innovation. But the quake had damaged the mint's water pump. As the men scrambled to repair it, Hawes directed them to douse the fires around the building with, of all things, a mixture of sulfuric and hydrochloric acid, barrels of which were kept inside the mint to manufacture coins.

After about an hour, with small fires now surrounding the building, an engineer named Jack Brady got the pump to work. But while the flowing water was a welcome sight, Hawes needed more men—and San Francisco firemen, busy elsewhere, were nowhere in sight. Help came from Brig. Gen. Frederick Funston, San Francisco's ranking military officer. Worried that criminal gangs from the city's notorious Barbary Coast might attack the mint and loot its vaults, Funston dispatched a squad of ten soldiers to aid in the building's defense. Along with a few day-shift employees who lived nearby and had rushed to the mint to lend a hand, the soldiers brought the number of defenders to around 60.

Burning ash rained down from the smoke-filled sky onto the mint's roof, which was littered with debris from recent construction. Hawes put the reinforcements to work immediately, ordering "everything on the roof that would burn thrown into the [court]yard," wrote mint employee Harold French.

By around 9 a.m., Hawes had done all he could to secure the mint. But refugees fleeing past the building from downtown brought news of huge fires that seemed to be merging into one horrific conflagration—headed right for the mint. Hawes must have wished that his boss, Mint Superintendent Frank Leach, were at his post. But Leach lived across the bay in Oakland, an almost unimaginable journey in the postquake chaos.

Yet Leach was just two blocks away at the corner of Market and Powell streets—where rifle-toting soldiers, positioned along Market Street since martial law was put in force less than three hours after the quake, were refusing to let him pass.

THERE WAS LITTLE in Frank Leach's biography to expect great acts of heroism. Before being named by President McKinley in 1897 to head the mint, he'd spent most of his adult life running small newspapers around Northern California, with a two-year detour in the California Legislature as a Republican representative.

MINT SUPERINTENDENT FRANK LEACH, WHO HAD NO EXPERIENCE FIGHTING FIRES, LED THE CREW THAT SAVED THE VAULTS—EARNING HIM PROMOTION TO DIRECTOR.

WEBSTER PHOTO / FROM RECOLLECTIONS OF A NEWSPAPERMAN, A RECORD OF THE LIFE AND EVENTS IN CALIFORNIA BY FRANK A. LEACH, SAMUEL LEVINSON PUBLISHER (SAN FRANSICO), 1917

Now, unable to cross the police lines to get to the mint, he was faced with the prospect of losing not only the most beautiful building west of Denver but also, and more important, some $300 million in its vaults. Still in the consciousness of Americans at the dawn of the 20th century was the Panic of 1857, a three-year economic downturn triggered in part by the loss of 15 tons of California gold when the SS *Central America* sank in a hurricane off the coast of the Carolinas. Leach could only imagine the consequences if the mint gold—nearly 30 times the value of that carried by the *Central America*—were to be lost.

Leach had been asleep at home when the earthquake struck; he later recalled that the temblor "seemed to threaten to tear our house to pieces. . . . Then there were the terrifying noises . . . the cracking and creaking of timber. . . . the smashing and crashing of falling glass. . . . And the thumping of falling bricks . . . from the chimney tops. . . . The air was filled with dust. It seemed as if the shaking would never cease. . . . For a few seconds I [thought] the end of the world had been reached."

After establishing that his family was safe, Leach rushed to the ferry terminal determined to get to the mint. Across

San Francisco journalist MICHAEL CASTLEMAN *is the author of 13 books, including a mystery novel,* The Lost Gold of San Francisco.

the bay, pillars of smoke were already rising over San Francisco. The ferries bringing refugees to Oakland were returning to San Francisco without passengers, with entry to the stricken city sealed off. But Leach explained his position to a ferry official, who allowed him to board.

As his boat approached San Francisco, Leach took in "a terrible sight. . . . Great clouds of black smoke . . . hid the rays of the sun. Buildings in the track of the rapidly spreading fire went down like houses of cardboard." The mint was just 12 blocks up Market Street from the ferry terminal, normally a 20-minute walk. But when he disembarked, Leach found Market Street to be "a mass of flames," so he was forced to circle north to skirt the devastation. Finally, perhaps 90 minutes after arriving in San Francisco, Leach reached Market and Powell, today the downtown terminus of the Fisherman's Wharf cable car line. There soldiers blocked his path, ignoring his pleas until, at last, a police officer recognized him and personally escorted him to the mint.

When Leach arrived, he found the mint employees and the ten soldiers going "about the work in a simple, everyday manner, but nevertheless with earnest, willing, and active spirit. I felt proud to be Superintendent of that band of faithful and brave men." He applauded Hawes' "excellent judgment": the decision to move everything flammable from around the doors and windows had prevented the small fires in the immediate vicinity from entering the Granite Lady.

But in the distance, flames were larger and growing. Leach divided the men into squads, positioning them on all four floors and on the roof, and instructed them to douse the building's interior with water, especially its window frames and mahogany woodwork. Wherever the hoses couldn't reach, he organized bucket brigades.

At 1 p.m., Leach surveyed the city from the mint's roof. "Our position look[ed] rather perilous," he later wrote in a memoir. "It did not seem probable that the structure could withstand the terrific mass of flames that was sweeping down upon us." If he had to abandon the mint, to "preserve the lives of the brave men defending the property," his plan was to retreat south, where many tenements had already burned. He could see that the area was charred wreckage—still hot, but cooling and, he thought, passable.

Suddenly, the fire was upon them: "Inside, the building was made almost dark as night by a mass of black smoke that swept in upon us just ahead of the advancing flames," Leach wrote. Then came "a tremendous shower of red hot cinders that fell on our building as thick as hail, and piled up on the roof in drifts nearly two feet deep . . . for a distance of twenty feet." Sparks and cinders fell on wood lying in the building's central courtyard, starting "a dozen little fires." Flames had finally breached the mint's walls.

AS FIRE RAMPAGED THROUGH THEIR DEVASTATED CITY, SAN FRANCISCANS FLED PAST THE MINT (ABOVE, AT LEFT). WHEN THE SMOKE FINALLY CLEARED, SCORES OF REFUGEES PITCHED TENTS ACROSS THE STREET FROM THE PORTICOED BUILDING, DRAWN BY THE MINT'S SUPPLY OF FRESH WATER, A RARITY IN THE RAVAGED CITY.

Leach and his men knew that if they failed to contain the fires in the courtyard, the mint would be lost. But as soon as they extinguished one blaze, the rain of cinders ignited another. "I show[ed] a soldier who was handling one line of hose how to get the most efficiency from the stream of water," Leach later recalled. Almost immediately, burning cinders scorched their clothes.

Sometime in the afternoon, their luck turned: probably because of a shift in wind, the hail of burning cinders abated. By this time, the men had drenched everything in the courtyard, so Leach sent them to the mint's upper floors, where, he wrote, "the hardest struggle against the flames would soon take place."

The mint's north side faced a narrow alley; across it, everything was ablaze. "Great masses of flame shot against the side of our building," Leach wrote, "as if directed against us by a huge blow-pipe." The new fire hoses that had appeared so powerful just days earlier now looked as puny as squirt guns. The heat was so intense that "the glass in our windows," Leach continued, "did not crack and

CONTINUED ON PAGE 64

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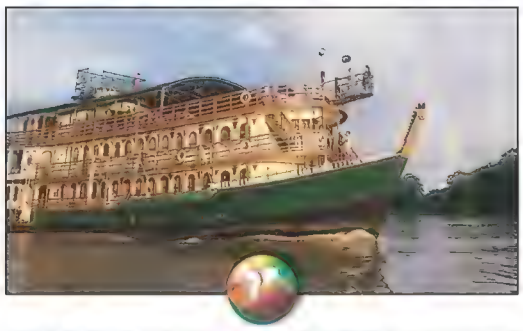

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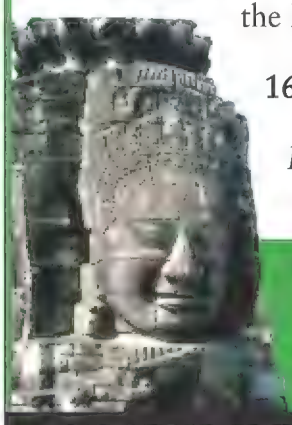

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SURVIVOR TALES

Each year, in dwindling numbers, they gather on April 18 to celebrate San Francisco's endurance, and their own. All but one are now centenarians. They rise before dawn and are driven in vintage cars to Lotta's Fountain on Market and Kearny streets, the main meeting place on the day of the great '06 earthquake. Police and fire engine sirens wail at 5:12 a.m., the moment that made them all part of history.

Only six survivors showed up last year, but twice as many are expected to appear at this year's centennial event. The eldest will likely be Herbert Hamrol, 103, who still works two days a week stocking shelves at a San Francisco grocery store. The baby of the group is Norma Norwood, 99, an honorary member who proudly calls herself "a result of the quake," having been conceived the night of the disaster in a refugee tent in Golden Gate Park. "My father said it was cold that night in the tent, so they snuggled to keep warm," she says. "They didn't want a baby; they had no money, but I came anyway. That's what happens when you snuggle."

"HONORARY MEMBER" NORMA NORWOOD, AGE 99, IN 2004.

It was their generation's Katrina. A city of 400,000 was flattened by a wallop of nature. An estimated 3,000 people died as a direct or indirect result of the quake and the fires that followed. More than half of San Francisco's residents were left homeless.

But tragedy plus time has made for a celebration. For the past three decades, tracked down and annually united by publicist Taren Sapienza, the group has met at the St. Francis Hotel. They stay in champagne-stocked suites and rise in darkness. In past years, hundreds of other San Franciscans, including the mayor, have also roused themselves early to pay these stalwarts homage. "In my heart, these survivors represent the city that San Francisco became," says Sapienza. "They personally may not have poured the cement and pounded the nails, but they rebuilt the city."

Frances Mae Duffy, 11 months old at the time of the quake, appreciates the tribute and is trying her best to, literally, live up to it. "I sure do hope I make it," she said in late February, noting that she was planning to buy a new feathered hat for the occasion. "It's a wonderful thing, it brings everybody together from every walk of life," she said of the ceremony. "No matter how rich or poor you were, you got shook up just the same."

Understandably, few direct recollections of the quake remain among those who gather from as far away as Oregon and Arizona. "I have a slight memory of being carried down the stairs by my mother," says Hamrol. "She held me in her left arm and her right arm held on to the banister."

Frances Duffy remembers being told that her mother sneaked out of the refugee park, braving police on the lookout for looters, to retrieve a wedding ring left on her kitchen sink while she washed dishes. She never found it.

Norwood's family, who lost their house in the quake, moved into a flat on Fell Street. Her father was a saloonkeeper, and at age 6, she says she'd dance for longshoremen who threw nickels and pennies on the floor.

It's tempting to look for common traits among these last few—to suppose that something so momentous has somehow shaped their view of the world. Claire Wight, Frances Duffy's daughter, believes this to be so. "Part of my mother's belief system," she says, "is that if you can survive something like that, the rest of life is gravy." —*KATHERINE ELLISON*

break, but melted down like butter." Joe Hammill observed, "We were prisoners and fighting for our lives."

Stone heated to high temperatures produces popping sounds, and the mint's enormous mass of granite and sandstone created what Harold French described as "thunder" like "the deafening detonations" of "thirteen-inch shells against the walls." Leach noted that "at times the concussions from the explosions were heavy enough to make the floor quiver."

With glass melted out of so many windows, Leach watched as "great tongues of flame" darted into the building, setting the interior woodwork ablaze. With the hose and buckets in relays, the men "dashed into the rooms to play water on the flames," Leach recalled. The men stayed in the rooms, which Leach called "veritable furnaces," for "as long as they could hold their breaths," and "then came out to be relieved by another crew of willing fighters." Joe Hammill remembered that "we stuck to the windows until they melted, playing a stream of water on the blazing woodwork. Then, as the flames leaped in and the smoke nearly choked us, we were ordered downstairs." So far, the mint's treasure lay safe in its basement vaults. But now, Hammill wrote, "It [appeared] the Mint was doomed."

Leach, too, feared the worst. Then, "to our surprise," the smoke cleared. The men, "with a cheer," he wrote, "went dashing into the fight again."

The smoke in the building's interior waxed and waned, depending on the wind and on the material burning in nearby buildings. The men lost track of time, dousing water on the flames every time the strangling smoke let up. Then, by midafternoon, Leach realized that "the explosions of the stones in our walls grew fainter, and finally we heard no more of them." That could mean only one thing. The conflagration had passed by the mint at last on its march westward through the city.

But the roof was still on fire. The men, Hammill wrote, "climbed out onto the roof and played the hose on the red-hot copper surface. . . . We worked for an hour, ripping up sheet copper and . . . using the hose where [it] would do the most good."

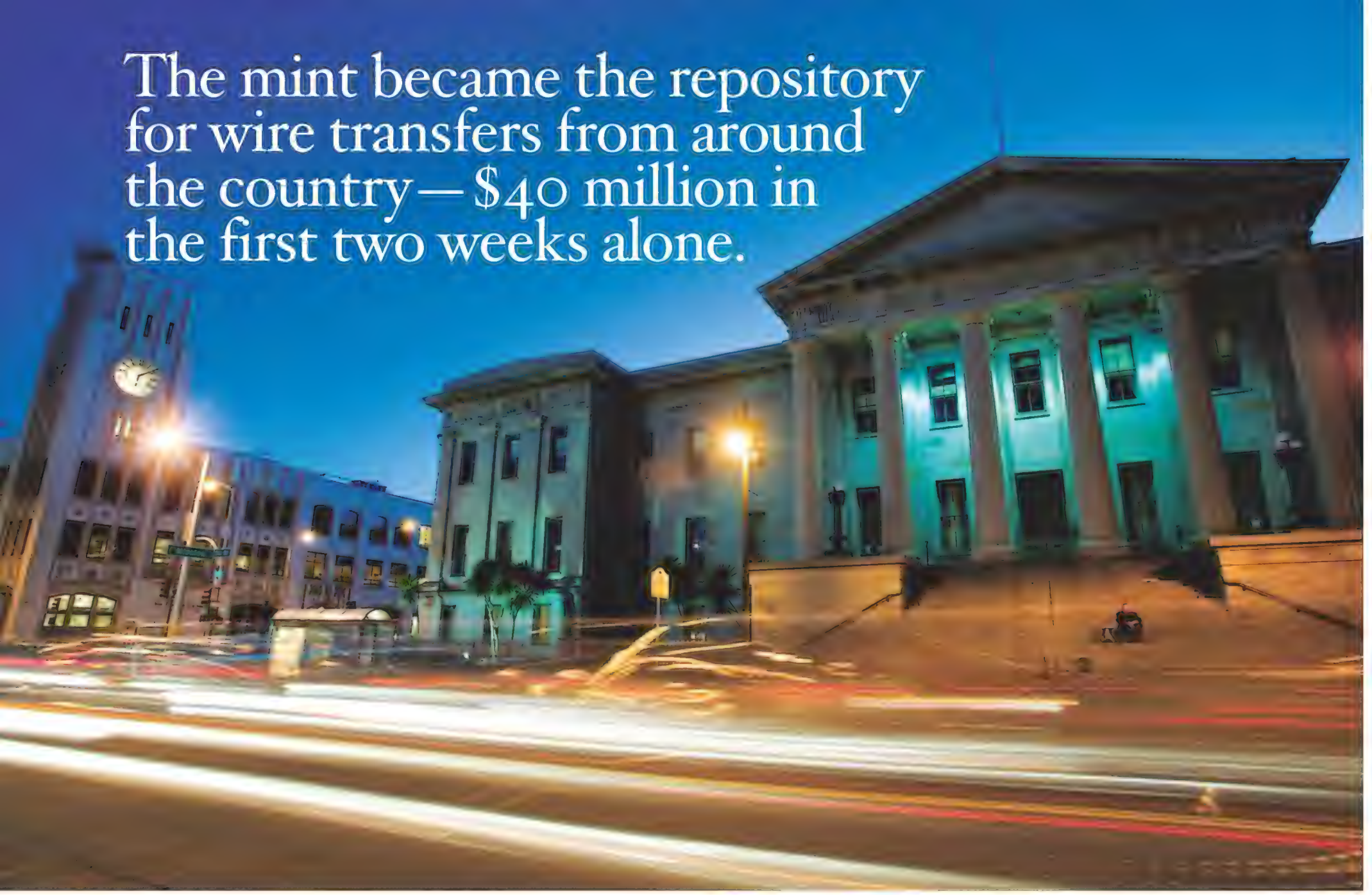
As Hammill and his comrades worked on the roof, Leach toured the building—finding, to his great relief, no serious damage. "The fight was won," he later wrote. "The Mint was saved."

AROUND 5 P.M., Frank Leach stepped outside for the first time in hours. The view "was one of utter ruin, desolation, and loneliness." Neighboring buildings "were piles of smoking ruins. Not a human being was to be seen. It seemed as if all the people and buildings of the city but the Mint and its defenders had been destroyed."

No Barbary Coast gangs had attacked the mint (although that didn't stop the *Oakland Tribune* from reporting erroneously, in a postquake edition, that 14 people had been shot trying to rob it). When martial law ended, the Granite Lady

BRANT WARD / SAN FRANCISCO CHRONICLE; P. 65 LIBRARY OF CONGRESS

The "fire fiend," as one observer called it, reached 20 stories high and temperatures of 2,000 degrees.



THE MINT PRODUCED CIRCULATING COINS UNTIL 1937. NOW THE SAN FRANCISCO LANDMARK (ABOVE) KNOWN AS THE OLD MINT WILL HOUSE A HISTORY MUSEUM, SLATED TO OPEN IN LATE 2008 OR EARLY 2009.

became a centerpiece of San Francisco's rebirth. Residents returning to the charred ruins of their homes found that the mint had the only potable water in the area. Leach installed pipelines from the mint's well to distribute water to residents until the mains could be repaired. Because of the people lined up for water, the neighborhood's first businesses to reopen after the fire set up in tents around the building. The mint also functioned as a bank for the federally sanctioned wire transfers that poured in from around the country—$40 million in the first two weeks alone, about $900 million in today's dollars.

For his efforts, Frank Leach earned a promotion to director of the mint in Washington, D.C. and the undying loyalty of his men. "Through his coolness and ability," Joe Hammill later wrote, "the men under him worked to the best advantage. He took his turn at the hose with the others, and did not ask his men to go where he would not go himself. It is remarkable how he stood the strain of the fire." The same could be said of the brave men who stood beside him, and saved not only the mint but perhaps also the U.S. economy itself.

THREE DECADES after Frank Leach and his men saved the nation's gold, the Treasury Department opened a more modern mint, the New Mint, about a mile from the Granite Lady, which has been known ever since as the Old Mint (the last coin was minted there in 1937). In 1961, the Old Mint was declared a National Historic Landmark. The federal government began using it as office space in 1972, sharing the building with a small numismatic museum. Then, in 1994, the Treasury Department closed the building.

In 2003, the federal government sold the Old Mint to the city of San Francisco for one dollar—a silver dollar struck at the mint in 1879. The city then proceeded to give the building over to the San Francisco Museum and Historical Society, which plans to turn it into the San Francisco History Museum.

The $60 million restoration plan calls for seismic strengthening, and the transformation of the building's courtyard into a jewel-like galleria rising from ground level to a glass roof at attic level. Glass-walled elevators and bridges will allow wheelchair access and easy passage around the building. Plans for the Old Mint also include a welcome center for the city of San Francisco, a restaurant and—in the historical vaults—a numismatic museum. City officials expect some 350,000 visitors a year when the museum opens in late 2008 or early 2009.

At the restoration groundbreaking last fall, Mayor Gavin Newsom called the Old Mint "the soul of San Francisco." Says Gilbert Castle, former executive director of the San Francisco Museum and Historical Society, "We're saving the mint again."

RICHARD MORGENSTEIN

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YOUNG AND RESTLESS

Saudi Arabia's baby boomers, born after the 1973 oil embargo, are redefining the kingdom's relationship with the modern world

BY AFSHIN MOLAVI **PHOTOGRAPHS BY KATE BROOKS**

AMR NABIL / AP / WIDE WORLD PHOTOS

KING ABDULLAH (ABOVE, AT A SERVICE LAST AUGUST FOR THE LATE KING FAHD) HAS PROMOTED REFORM SINCE TAKING THE THRONE, BUT DEMOGRAPHY MAY BE A GREATER IMPETUS FOR CHANGE IN THE KINGDOM (OPPOSITE, YOUNG MEN AND WOMEN AT A RED SEA RESORT EVADE TRADITIONAL SEGREGATION OF THE SEXES BY TEXT MESSAGING ON CELLPHONES).

SCENTED SMOKE FROM DOZENS of water pipes mingled with Lebanese pop music at Al-Nakheel, a seaside restaurant in the Red Sea port of Jeddah. Saudi men in white robes and women in black *abayas*, their head scarves falling to their shoulders, leaned back on red cushions as they sipped tea and shared lamb kebab and hummus. Four young Saudi women, head scarves removed, trailed perfume as they walked past. Nearby, a teenage boy snapped photos of his friends with a cellphone. At an adjoining table, two young men with slicked-back hair swayed their heads to a hip-hop song echoing from the parking lot.

"Look around," said Khaled al-Maeena, editor in chief of the English-language daily *Arab News*. "You wouldn't have seen this even a few years ago."

Saudi Arabia, long bound by tradition and religious conservatism, is beginning to embrace change. You can see it in public places like Al-Nakheel. You hear it in conversations with ordinary Saudis. You read about it in an energetic local press and witness it in Saudi cyberspace. Slowly, tentatively, almost imperceptibly to outsiders, the kingdom is redefining its relationship with the modern world.

The accession of King Abdullah in August has something to do with it. Over the past several months he has freed several liberal reformers from jail, promised women greater rights and tolerated levels of press freedom unseen in Saudi history; he has reached out to marginalized minorities such as the Shiites, reined in the notorious religious "morals" police and taken steps to improve education and judicial systems long dominated by extremist teachers and judges. But a look around Al-Nakheel suggests another reason for change: demography.

Saudi Arabia is one of the youngest countries in the world, with some 75 percent of the population under 30 and 60 percent under 21; more than one in three Saudis is under 14. Saudi Arabia's changes are coming not only from the authorities above, but also from below, driven by this young and increasingly urban generation. Even as some of them jealously guard parts of the status quo and

SIGNS OF THE TIMES: THE *ARAB NEWS* HAS DOUBLED ITS FULL-TIME FEMALE STAFF IN RECENT YEARS (EBTIHAL MUBARAK, CENTER, WITH COLLEAGUE HASAN HATRASH) AND HAS COVERED RIGHTS ISSUES MORE EXTENSIVELY.

display a zeal for their Islamic faith unseen in their parents' generation, others are recalibrating the balance between modernity and tradition, directing bursts of new energy at civil society and demanding new political and social rights. "We must face the facts," said al-Maeena, who is 54. "This huge youth population will determine our future. That's why we need to watch them carefully and train them well. They hold the keys to the kingdom."

SAUDI ARABIA, home to a quarter of the world's known oil reserves, is one of the United States' key allies in the Middle East. Yet its baby boom was launched by an act of defiance—the 1973 oil embargo, in which King Faisal suspended supplies to the United States to protest Washington's support for Israel in its war with Egypt and Syria. As oil prices rose, cash-rich Saudis began having families in record numbers. The kingdom's population grew about 5 percent annually, from 6 million in 1970 to 16 million in 1989. (The current growth rate has slowed to about 2.5 percent, and the population is 24 million.)

Those baby boomers are now coming of age. And as Saudi analyst Mai Yamani writes in her book *Changed Identities: The Challenge of the New Generation in Saudi Arabia*, "Their numbers alone make them the crucial political constituency."

Their grandparents largely lived on subsistence farms in unconnected villages where tribe, clan and ethnicity trumped national identity. Their parents (at least the men) worked in the burgeoning state bureaucracy and trained with the foreign engineers and bankers who flocked to the kingdom; they lived in an era when television, foreign travel, multilane highways, national newspapers and mass education were novelties. But the boomers live in a mass culture fed by satellite TV and the Internet, consumerism, an intellectual glasnost and stirrings of Saudi nationalism. "I'm not sure young Saudis grasp the enormity of the changes in just three generations," al-Maeena told me. "It is like night and day."

The boomers, however, did not grow into fantastic wealth. In 1981, the kingdom's per capita income was $28,000, making it one of the richest countries on earth. But by 1993, when I first met al-Maeena in Jeddah during a year I spent there on a journalism exchange program, the kingdom was recovering from both a long recession (oil prices had dwindled) and a war on its border (the Persian Gulf war of 1991). Per capita income was declining rapidly, and boomers were straining the finances of a largely welfare-driven state. Government jobs and scholarships for foreign study grew scarce. (In 2001, per capita income was a quarter of what it had been in 1981.)

Arabic satellite television was in its infancy, and state censorship was pervasive—in August 1990 the Saudi government prohibited the media from publishing news of Iraq's invasion of Kuwait for three days. But as the '90s progressed, technology forced change. Long-distance telephone

"I'm not sure young Saudis grasp the enormity of the changes in just three generations. It is like night and day."

ALL: KATE BROOKS / POLARIS IMAGES

service became affordable. The Internet began to shrink the world. Aljazeera became a boisterous news channel breaking social, political and religious taboos. Many young Saudis began to feel they were living in a country with outdated institutions: an education system that favored rote learning over critical thinking, a religious establishment that promoted an intolerant brand of Islam and a government that was falling behind its neighbors in economic development.

"The 1990s were not a good decade for young people," said one young Saudi civil servant, who asked not to be named because he works for the government. "We didn't have the secure jobs of our parents' generation, and our government was basically incompetent and getting too corrupt." In the private sector, employers preferred skilled foreigners to newly minted Saudi college graduates. "We were just sitting still while everyone else seemed to be moving forward," the civil servant added.

Then came September 11, 2001, and with it the revelation that 15 of the 19 men who launched the attacks on the United

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AFSHIN MOLAVI, a fellow at the New America Foundation, has covered the Middle East for many publications. Beirut-based KATE BROOKS has also photographed in Pakistan and Iraq.

TRADITION AND CHANGE COEXIST AT KINGDOM HOLDINGS IN RIYADH; ADVISER TO THE OWNER MUNA ABUSULAYMAN (RIGHT) AND OTHER MUSLIM WOMEN MAY NOW CHOOSE WHETHER TO WEAR A *HIJAB* (VEIL).

States were Saudis—acting under the auspices of another Saudi, Osama bin Laden. "That event and the [West's] anti-Saudi reaction made me feel more nationalist," said Khaled Salti, a 21-year-old student in Riyadh. "I wanted to go to America and defend Saudi Arabia in public forums, to tell them that we are not all terrorists. I wanted to do something for my country."

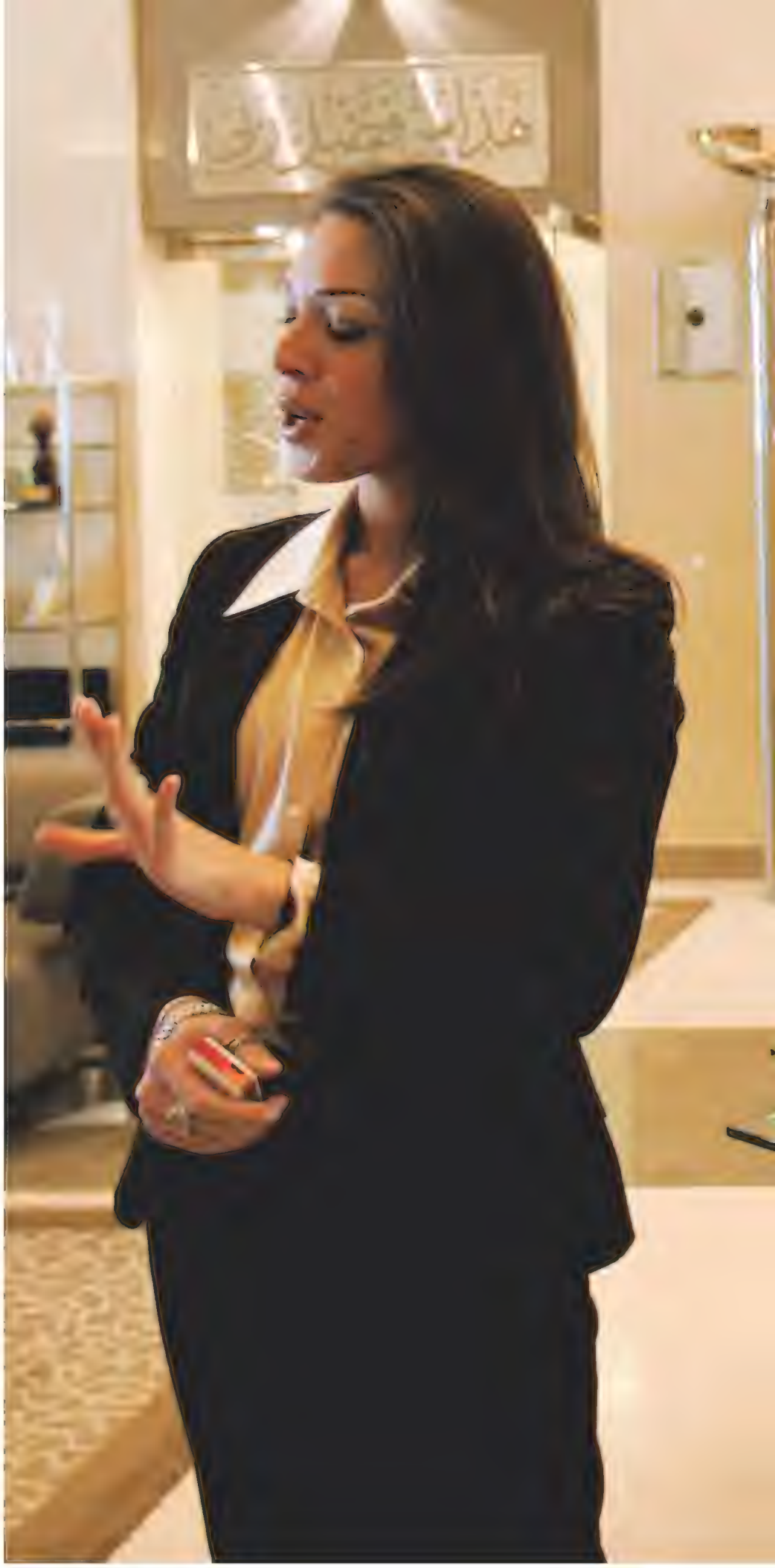
Ebtihal Mubarak, a 27-year-old reporter for the *Arab News*, said the attacks "forced us to face some ugly truths: that such terrible people exist in our society and that our education system failed us." She called May 12, 2003, another infamous date for many Saudis: Al Qaeda bombed an expatriate compound in Riyadh that day, killing 35, including 9 Americans and 7 Saudis. A series of attacks on Westerners, Saudi government sites and Arabs ensued, leaving hundreds dead. (In late February, Al Qaeda also took responsibility for a failed attempt to blow up a Saudi oil-processing complex.)

Most violent opposition to the ruling al-Saud family comes from boomers—jihadists in their 20s and 30s—but those extremists are hardly representative of their generation. "When we think of youth in this country, two incorrect stereotypes emerge," Hani Khoja, a 37-year-old business consultant and television producer, told me. "We think of the religious radical who wants to join jihadist movements, like the 9/11 guys, or we think of extremist fun-seekers who think only of listening to pop music and having a good time. But the reality is that most young Saudis are somewhere in the middle, looking for answers, curious about the world and uncertain of the path they should take."

In dozens of conversations with young Saudis in five cities and a village, it became obvious that there is no monolithic Saudi youth worldview. Opinions vary widely on everything from internal reform to foreign policy to the kingdom's relations with the United States and the rest of the West. Regional, ethnic and religious differences also remain. Young Saudi Shiites often feel alienated in a country whose religious establishment often refers to them as "unbelievers." Residents of Hijaz, a cosmopolitan region that encompasses Mecca, Jeddah and Medina, regularly complain about the religious conservatism and political domination of the Najd, the province from which most religious and political elites hail. Some Najdis scorn Hijazis as "impure Arabs," children fertilized over the centuries by the dozens of nationalities who overstayed a pilgrimage to Mecca. And loyalty to tribe or region may still trump loyalty to the state.

But despite these differences, the kingdom's baby boomers seem to agree that change is necessary. And collectively they are shaping a new national identity and a common Saudi narrative.

EBTIHAL MUBARAK is one of several talented female reporters and editors on the *Arab News* staff. That in itself is a change from my days at the paper more than a decade



"The *hijab* is such an overexamined issue in the West. I like wearing it. We as women face more serious issues."

ago. In recent years the *News* has doubled its full-time Saudi female staff and put more female reporters out in the field. Mubarak reports on the small but growing movement for greater political and social rights for Saudis. Persecution by extremists is a common theme in her work. As she surfed Saudi Internet forums one day last fall, she came across a posting describing an attack on a liberal journalist in the northern city of Hail. "A journalist's car had been attacked while he was sleeping," she said. "A note on his car read: 'This time it's your car, next time it will be you.'"

A few years ago, such an episode would probably have ended with the Hail journalist intimidated into silence. But now, Mubarak worked the phones, speaking with the journalist, the police and outside experts, and put together a story for the next day's paper, quoting the journalist: "What happened to me is not just a threat to one individual but to the whole of society." Thanks to the Internet, the episode became a national story, and the subject of vigorous debate.

And yet: after Mubarak exercised the power of the press, she faced the limited power of Saudi women. Once she filed her story, she hung around the newsroom, glancing at her watch—waiting for a driver, because under a patriarchal legal

ECONOMIC REFORM IS "THE CHARIOT THAT WILL DRIVE ALL OTHER REFORMS," SAYS PRINCE MOHAMMED KHALED AL-FAISAL (RIGHT). HIS GREAT-GRANDFATHER KING FAISAL (IN PORTRAIT) STARTED THE 1973 OIL EMBARGO.

system Saudi women may not drive. "I feel like I'm always waiting for someone to pick me up," she said. "Imagine a reporter who cannot drive. How will we beat the competition when we are always waiting to be picked up by someone?"

Mubarak reflects how much Saudi society has changed, and how much it hasn't. Like her generational peers, she comes from the urban middle class. Yet as a working woman, she represents a minority: only 5 percent of Saudi women work outside the home. Most are stifled by a patriarchal society and a legal system that treats them like children.

Beyond matters of mobility and employment opportunity is the issue of spousal abuse, which, according to Saudi newspapers, remains prevalent. In one high-profile case, the husband of Rania al-Baz, the country's first female broadcaster, beat her nearly to death in 2004. Saudi media covered the case with the zeal of British tabloids, creating widespread sympathy for the victim and sparking a national debate on abuse. The case even made it to "Oprah," where al-Baz was hailed as a woman of courage. Once the spotlight dimmed, however, the broadcaster succumbed to pressure from an Islamic judge and from her own family to forgive her husband.

Tensions between the old and the new aren't always so consequential, but they persist. Hani Khoja, the TV producer, told me that he "wanted to show that it is possible to be religious and modern at the same time" on the popular youth-oriented show "Yallah Shabab" ("Let's Go Youth"). Another program that promotes a more modern view of Islam is "Kalam Nouam" ("Speaking Softly"). One of its hostesses, Muna AbuSulayman, embodies that blend. Born in 1973, AbuSulayman followed her father, a liberal Islamic scholar, around the globe, including nine years in the United States, where she studied English literature. (Saudi universities opened their doors to women in 1964.) Today, in addition to her television work, she advises billionaire businessman Prince Al-Waleed bin Talal on philanthropic activities that seek to build links between the Islamic world and the West.

The prince's company, Kingdom Holdings, has the only known Saudi workplace that allows Muslim women to choose whether to wear the *hijab* (the Islamic veil and other modest apparel) or Western dress. (The prince also employs the only female Saudi pilot.) Kingdom Holdings' quarters look more Beirut than Riyadh, with fashionable women in corporate attire shuffling between offices. AbuSulayman, however, chooses to wear the hijab—on the day I met her, a striking green head scarf and shirt ensemble. "The hijab is such an overexamined issue in the West," she told me. "I like wearing it. We as women face more serious issues."

And even as she acknowledges that "the opportunities available to me today were unavailable a generation ago," she says, "We are hopeful to achieve more. I expect my daughter to be living in an entirely different world."

"I want to get things done. . . . I will try to do it quietly and not just to score political points against the extremists."

"I AM FROM BURAYDA, that famous city you Western journalists are curious about," Adel Toraifi said when we met at a Holiday Inn in Riyadh. He was smiling—Burayda is the heartland of Wahhabi Islam. Toraifi, now 27, came of age in one of the most conservative regions of the kingdom.

More than two centuries ago, Sheikh ibn Abd al Wahhab emerged from the desert there with a puritanical vision of Islam focused on the concept of *tawhid*, or the oneness of God. At the time, he made a key alliance with the local al-Saud ruler, who pledged to support the passionate preacher in return for support from the religious establishment. Eventually, Wahhabism spread across central Arabia, even when the al-Sauds lost power twice in the 19th century (to regain it again in the early 20th). When King Abdulaziz ibn Saud, the founder of modern Saudi Arabia, began his march across the Arabian Peninsula in the early 20th century to reclaim his tribal lands, he revived the bargain with the descendants of Sheikh ibn Abd al Wahhab, known today as the al-Alsheikh family.

The essential outlines of that relationship remain intact. Wahhabi preachers hold the highest positions of religious authority, while the al-Sauds hold political authority. Today's

SAUDI ARABIA REMAINS A DEEPLY RELIGIOUS SOCIETY (WORKERS AT A BENTLEY DEALER IN JEDDAH TAKE TIME FOR PRAYERS), AND THE INFLUENCE OF ISLAM IS REINFORCED BY AN ALLIANCE BETWEEN MOSQUE AND STATE.

Saudi Wahhabist is quick to condemn those who belong to other schools of religious thought as impure or, worse, *kufr*, unbelievers. That explains part of the political radicalism of young Saudi jihadists—but only part.

Another explanation might lie in the evolution of Saudi Arabia's education system. In the 1960s and '70s, the kingdom fought a rear-guard battle with Egypt for regional hearts and minds. To counter Gamal Abdel Nasser's secular pan-Arab nationalism, the Saudis promoted a conservative pan-Islamism. While Egypt, Syria and Jordan were expelling Islamist radicals, many of whom were college graduates, Saudi Arabia welcomed them as teachers.

When Toraifi was 13, he decided to become a religious scholar in the Wahhabi tradition. For five years, he led an ascetic life, studying the Koran and the sayings of the Prophet Muhammad several hours a day. "I was not a radical," he said, "but my mind was not open, either. I dreamed of becoming a respected scholar, but I had never read a Western book or anything by an Islamic modernist or Arab liberal."

As he walked home from evening prayer one day, he was hit by a car. After three months in a coma, he spent more than a year recuperating in a hospital, thinking and reading. "I thought to myself: I did everything right. I prayed. I fasted. I learned the Koran by heart, and yet I got hit by a car. It was troubling to me."

Once recovered, Toraifi took to reading Western philosophy and Arab liberals with a seminarian's zeal. He studied engineering, but political philosophy was his passion. After taking a job as a development executive with a German technology company, he began writing articles critical of Wahhabism—including one published shortly after the May 12, 2003, attacks warning that a "Saudi Manhattan" was coming unless religious extremism was checked. He was excoriated in some religious Internet forums, but the government largely let it pass.

Then Toraifi repeated his views on Aljazeera, whose coverage had often been critical of the royal family. That, apparently, crossed a line: afterward, Toraifi said, Saudi intelligence detained him for several days before letting him go with a warning. Then an establishment newspaper offered him a column—writing about foreign, but not domestic, affairs. The gesture was seen as an attempt to bring a critic into the mainstream. But he dismisses concerns that he might have been co-opted. "I will continue speaking about the importance of democracy," he told me. (In December, he accepted a fellowship at a British think tank, where he is writing a paper on Saudi Arabia's reform movement.)

THE AL-SAUDS number some 7,000 princes and princesses. The most senior princes are sons of the late Ibn Saud, who died in 1953, and most are in their 60s, 70s and 80s. Their sons include Prince Bandar bin Sultan, the former Saudi am-

"I was not a radical, but my mind wasn't open, either. . . . I had never read a Western book or anything by an Islamic modernist."

bassador to the United States, and Prince Turki al-Faisal, the former director of Saudi intelligence and the current ambassador to the United States. Third- and fourth-generation princes have just begun to make their marks, and while the occasional rumor about corruption or a wild night in a European disco makes the rounds, several third-generation princes are becoming important drivers of modernization.

Mohammed Khaled al-Faisal, 38, is one of them. The Harvard MBA runs a conglomerate of diverse businesses, including a world-class industrialized dairy farm. When I visited his Riyadh office, he proudly described an initiative that his company had taken to hire village widows and unmarried women to work at the dairy.

"In order to circumvent protest from local religious authorities, we reached out to them and asked them to consult with us on the proper uniforms the women should wear on the job," he said. "We didn't *ask* them if we could employ women; we simply brought them into the discussion, so they could play a role in how we do it. I am a businessman. I want to get things done. If my aim is to employ more women, I will try to do it quietly and not just to score political points against the extremists."

MOST YOUNG SAUDIS, A MARKETER SAYS, ARE "CURIOUS ABOUT THE WORLD AND UNCERTAIN OF THE PATH THEY SHOULD TAKE." (WOMEN AT A RIYADH MCDONALD'S STEP INTO THE MEN'S QUEUE WHEN THEIR LINE IS TOO LONG.)

Economic reform, he went on, is "the chariot that will drive all other reforms." What Saudi Arabia needs, in his judgment, is more small and medium-sized businesses and the jobs they would provide.

"I SEE MY older brother unemployed," said Hassan, a dimpled 14-year-old. "I'm afraid that will happen to me too." The four other students in the room, who ranged in age from 13 to 16, nodded their heads in agreement.

They and their teacher met me in an office in Qatif, in the oil-rich Eastern Province—home to most of Saudi Arabia's Shiite Muslims. Some of the most vitriolic abuse from Saudi religious authorities and ordinary citizens is directed at Shiites, who make up only 15 percent of the population. Though they share job anxiety with their Sunni peers, they feel that upward mobility belongs primarily to Sunnis.

Two of the youths attend a village school several miles away, while the other three go to the local public high school. The lack of a college in Qatif, many Shiites say, is an example of the discrimination they feel.

I asked if teaching had improved since 9/11. "The new teachers are good," said Ali, a smiling 15-year-old, "but the old ones are still around and still bad." The students said their teachers praised bin Laden, ridiculed the United States or described Shiites as unbelievers.

Recently, Ali said, he had brought sweets to school to celebrate the birthday of a prominent Shiite religious figure, and his teacher reprimanded him with anti-Shiite slurs.

I asked if they ever thought of leaving Saudi Arabia.

"No, Qatif is my home," said Hassan. "I am proud to be from Qatif."

Are they proud to be from Saudi Arabia?

Mohammad, who had spoken very little, answered: "If the government doesn't make us feel included, why should we be proud to be from Saudi Arabia? If they did include us more, then I think we would all be proud."

PUBLIC POP CONCERTS are banned in the kingdom, so musically inclined young Saudis gather at underground events or in small groups. Hasan Hatrash, an *Arab News* reporter and musician, took me to a heavy-metal jam session in Jeddah.

Hatrash, who abstains from drink and covers the hajj, the annual Islamic pilgrimage, for local papers, had spent the past two years in Malaysia, waiting tables and playing guitar in bars. When I asked about his eclectic tastes, he said, "I am a Hijazi. We have DNA from everywhere in the world."

At a walled villa in Jeddah, young men were tuning guitars and tapping drums. Ahmad, who is half-Lebanese and half-Saudi, is the lead singer of a band known as Grieving Age. He introduced me around. A few of the musicians, including Ahmad, had long hair and beards, but most did not. One wore a Starbucks shirt—for his job, afterward.

"I see my older brother unemployed," says one of the students in the room. "I am afraid that will happen to me too."

Another worked as an attendant on Saudia, the national airline, and a third worked in insurance. All seemed exceedingly polite.

They played songs from the genre heavy-metal fans call "melodic death." It had a haunting appeal, though the lyrics were, predictably, unintelligible amid the heavy bass. On the walls, a poster of the British band Iron Maiden competed for space with one of Mariam Fares, a sultry Lebanese pop star.

When Hatrash took the stage, he played a series of guitar favorites, such as Jimi Hendrix's "Purple Haze" and softer rock, to the seeming delight of the heavy-metal aficionados. Throughout the evening, more young men arrived—but no women. Some took turns playing; others just watched. By midnight, the jam session had wound down. "This is a tame event, as you can see," Hatrash said. "There is no drinking or drugs. We are just enjoying the music."

I asked if he could envision a day when he could play in public, instead of behind closed doors.

He just smiled and launched into another song. Someone jumped up to accompany him on the bass, and Ahmad mouthed the lyrics. The guy in the Starbucks shirt rushed out the door, late for his shift.

A GIBSON GIRL IN NEW GUINEA

Two Seattle women have retraced the intrepid travels of model and portrait artist Caroline Mytinger, who journeyed to the South Sea islands in the 1920s to capture "vanishing primitives" on canvas

BY TESSA DECARLO

PHOTOGRAPHS BY MICHELE WESTMORLAND AND KAREN HUNTT

CAROLINE MYTINGER, with one of her portraits of South
Sea Island head-hunters which are on exhibition at the
Seattle Art Museum. She lived four years in the islands,

MYTINGER (FAR LEFT, IN 1935 AT AGE 38, WITH ONE OF HER SOUTH SEA ISLAND PAINTINGS) CREATED DOZENS OF DRAWINGS AND PAINTINGS DURING HER 1920S JOURNEY TO THE THEN LARGELY UNEXPLORED SOLOMON ISLANDS AND NEW GUINEA (ABOVE, NEW BRITAIN ISLAND). THE TWO BOOKS SHE WROTE ABOUT HER SOUTH PACIFIC ADVENTURES (LEFT, *NEW GUINEA HEADHUNT*, 1946) WERE BOTH BESTSELLERS.

In the 1920s, New Guinea and the Solomon Islands were among the world's last wild places. Largely unmapped and inhabited by headhunters and cannibals, the jungle isles of the Coral Sea captured the popular imagination as exemplars of the unknown. Dozens of adventurers took up the challenge posed by these remote lands, but perhaps the least likely were two young American women who set out from San Francisco in 1926 armed with little more than art supplies and a ukulele.

Caroline Mytinger, a 29-year-old Gibson girl turned society portraitist, undertook the expedition in hopes, she wrote, of realizing her dream of recording "vanishing primitives" with her paints and brushes. She convinced a longtime friend, Margaret Warner, to accompany her on what became a four-year journey throughout the South Seas.

When the two women finally made it back to the United States in the winter of 1929, they were in poor health, but they came bearing treasure: more than two dozen of Mytinger's vivid oils of the region's peoples, plus dozens of sketches and photographs. The paintings were exhibited at New York City's American Museum of Natural History, the Brooklyn Museum and other museums around the country in the 1930s, and during the next decade Mytinger recorded her adventures in two bestselling books illustrated with her artwork.

The recognition Mytinger won proved fleeting, however. She returned to making portraits of society matrons and their children, her books went out of print and her South Seas paintings disappeared into storage. For decades, even well before her death in 1980 at the age of 83, both she and her work had been forgotten by the wider world.

That might still be the case if it weren't for another pair of adventurous American women. A gift of one of Mytinger's books in 1994 inspired Seattle-based photographers Michele Westmorland and Karen Huntt to spend several years and raise some $300,000 mounting an expedition to retrace Mytinger's original South Seas journey (see sidebar, page 86).

They also tracked down most of

DUBBED "CLEVELAND'S MOST BEAUTIFUL WOMAN," MYTINGER (FAR RIGHT IN A 1920 AD FOR BODY POWDER) PAID FOR ART SCHOOL BY MODELING. IN 1926 SHE SET OUT WITH HER FRIEND MARGARET WARNER (RIGHT, WITH LARGE UKULELE) TO "HEADHUNT" FOR SUBJECTS TO PAINT IN THE SOUTH SEAS. HER PORTRAIT OF AHUIA (LEFT) DEPICTS THE NEW GUINEA MAN WEARING A TRADITIONAL FEATHERED HEADDRESS.

CAROLINE MYTINGER SCRAPBOOK CLIPPING / MONTERY MUSEUM OF ART (2); P. 80 CAROLINE MYTINGER SCRAPBOOK CLIPPING / (SEATTLE POST INTELLIGENCER 5/5/35) / MONTERY MUSEUM OF ART; THE MACMILLAN COMPANY, NEW YORK; P. 81 KAREN HUNTT; P. 83 PHOEBE HEARST MUSEUM OF ANTHROPOLOGY

Mytinger's island paintings, the bulk of which are now housed in the archives of the University of California's Phoebe A. Hearst Museum of Anthropology in Berkeley. Today these pictures evoke the mystery and allure of two distant worlds—the exotic peoples that Mytinger set out to document and the reckless optimism of 1920s America. That era of flappers, flagpole sitters and barnstormers is perhaps the only time that could have produced an expedition at once so ambitious and so foolhardy.

WHEN MYTINGER and Warner sailed through the Golden Gate on a foggy day in March 1926, they were unencumbered, Mytinger later wrote, "by the usual equipment of expeditions: by endowment funds, by precedents, doubts, supplies, an expedition yacht or airplane, by even the blessings or belief of our friends and families, who said we couldn't do it." They had only $400—"a reserve fund to 'ship the bodies home,'" as Mytinger put it—and plans to cover expenses by making portraits of local white colonials. The rest of their time would be spent, she said, "headhunting" for native models.

The young women had already used a similar earn-as-you-go method to travel around the United States, with Mytinger bringing in the money by making portraits while Warner entertained the portrait sitters, playing them songs on her ukulele and, Mytinger recounted, "generally keeping everyone awake in the pose."

When the two adventurers left San Francisco, their goal was to head to the Solomon Islands and then New Guinea, but their low-budget mode of travel dictated a circuitous route that took them first to Hawaii, New Zealand and Australia. Along the way, they snagged as many portrait commissions as they could and hitched free rides on passing boats whenever possible.

Once they reached the Solomons, the women met with what less daring souls might have regarded as excellent reasons to abandon their journey. Mytinger's case of art supplies fell into the ocean when it was being transferred to a launch bringing them from one Guadalcanal settlement to another. The remoteness of the islands defied Mytinger's efforts to order replacements, so she had to make do with boat paint and sail canvas. Both women also contracted malaria and fell victim to a host of other tropical ailments, including, Mytinger reported, "jungle rot" and "Shanghai feet," as well as attacks by cockroaches and stinging ants.

But these were minor annoyances to the pair, who by all accounts gloried in exploring the strangeness and beauty of the exotic isles and their peoples. In her paintings and drawings, Mytinger depicted men, women and children of the coastal fishing tribes as well as members of the bush tribes living deep in the jungle. She recorded native dress and customs, the indigenous architecture of vine-and-bamboo huts and the men's elaborate hairdos—bleached with lime (to kill lice) and decorated with feathers, flowers and live butterflies.

In the Solomon Islands in the village of Patutiva, the two Americans were the only women invited on a hunt for giant turtles. "There seemed to be acres of great brown shells floating on the water," Mytinger recalled. "The whole surface was

"ONE OF MY AIMS IN THE PORTRAITS OF PRIMITIVES WAS TO MAKE THEM LOOK LIKE NORMAL HUMAN BEINGS, WHICH THEY ARE," MYTINGER WROTE, "AND NOT LIKE THE SAVAGES SOME PEOPLE HAVE REPORTED THEM TO BE." THE ARTIST (LEFT, C. 1928 IN THE NEW GUINEA VILLAGE OF SAMARAI, PAINTING *SARLI AND HIS WOMAN*, ABOVE) WROTE THAT THE COUPLE HAD A "MYSTICAL UNION THAT IS RARE IN ANY SOCIETY." SHORTLY AFTER THE PICTURE WAS FINISHED, SARLI AND HIS WIFE, WHOSE NAME IS UNKNOWN, DIED OF INFLUENZA BROUGHT TO THEIR VILLAGE BY AN AMERICAN FREIGHTER.

PHOEBE HEARST MUSEUM OF ANTHROPOLOGY; CAROLINE MYTINGER SCRAPBOOK CLIPPING / MONTERY MUSEUM OF ART

covered far out ahead with waving islands of them." The hunters slipped into the water, turned the slumbering turtles onto their backs (rendering them helpless) and pulled them onto shore with their boats. Days of riotous feasting followed, in a scene that Mytinger wrote was "the picture of Melanesia: the smoky shafts of sunlight . . . ; the billions of flies; the racing dogs and yipping children; the laughter and whacking and the wonderful color of great bowls of golden [turtle] eggs on the green banana-leaf carpet."

After surviving an earthquake in Rabaul and producing a stack of canvases depicting the Coral Sea peoples, Mytinger and Warner moved on—by wangling rides on a series of small boats—to what is now Papua New Guinea. They spent many months hopping from settlement to settlement along the coastline, sometimes through terrifying storms. Mytinger described one night voyage in a leaky launch whose engine stalled during a ferocious downpour; only frantic paddling with wooden slats ripped from the boat's engine cover saved them from being swept into the surf. "I do not know why it seems so much worse to drown on a dark night than in the daylight," Mytinger later wrote.

Despite such brushes with disaster, the two eagerly seized the opportunity to travel into New Guinea's still largely unexplored interior on the launch of an American sugar-cane expedition going up the island's Fly River. Mytinger and Warner went ashore several times, often against the advice of their companions. On one occasion, they were charged by a gigantic lizard. On another, in the remote village of Weriadai, they were confronted by indignant cannibals when they managed to sneak away from the colonial government representative and the Papuan troops who were escorting them and finagle their way into a women's "longhouse"—a gathering place strictly taboo to outsiders. When the government representative arrived with the Papuan Army "and a vociferously protesting crowd of tribesmen," Mytinger recounted, "we gals were all sitting chummily on the floor inside the longhouse, the clay-plastered Weriadai matrons acquiring charm by smoking Old Golds and Margaret and I yodeling the Hawaiian 'Piercing Wind.'" Mytinger got the sketches and photographs she wanted, the Weriadai women got to one-up their men with the Americans' cigarettes, and the government representative eventually thanked the two women for helping to promote "friendly relations."

MYTINGER'S adventurous streak ran in the family. Her father, Lewis Mytinger, a tinkerer whose inventions included a can opener and a machine for washing gold ore, had already shed one family when he married Orlese McDowell in 1895 and settled in Sacramento, California. But within two years—just four days after Caroline was born on March 6, 1897—Lewis was writing to a sister to ask for help finding an old girlfriend. "You know," he wrote, "I might take a notion to marry again some day and it is good to have a great many to select from." Caroline was named after another sister, but that seems to have been the extent of his family feeling. Not long after her birth he took off for the gold fields of Alaska, where, according to family records, he accidentally drowned in the Klutina River in 1898.

A LOCAL TABOO DEEMED THE JUST COMPLETED CANOE IN WHICH MYTINGER PAINTED IOMAI, A CANOE CARVER FROM THE DEBOYNE ISLANDS, "TOO FRAGILE TO BE LOOKED ON BY FEMALE EYES." THE TABOO HELD THAT IF A WOMAN LOOKED UPON AN UNFINISHED CANOE, IT WOULD SINK, BUT MYTINGER PERSUADED THE NATIVE MEN TO LET HER PAINT IOMAI IN IT.

Young Caroline and her mother moved to Cleveland, Ohio, where Caroline grew up and attended the Cleveland School of Art from 1916 to 1919. Through an art school classmate she rediscovered her namesake, her aunt Caroline, who lived in Washington, D.C. In a letter to her newfound relative, the 21-year-old described herself as "tall and thin," adding, "I appear to have large feet and orange tresses, which

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California resident TESSA DECARLO *wrote about photographer Diane Arbus in the May 2004 issue. Photographers* MICHELE WESTMORLAND *and* KAREN HUNTT *are based in Seattle.*

PHOEBE HEARST MUSEUM OF ANTHROPOLOGY

In Mytinger's Footsteps

Photographer Michele Westmorland had traveled to Papua New Guinea many times when a friend of her mother's pressed a copy of Caroline Mytinger's book *New Guinea Headhunt* into her hands in 1994. "As soon as I read the book," Westmorland says, "I knew that here was a story that needed to be told."

Determined to retrace Mytinger's travels, Westmorland began researching the reclusive artist's life and spent years trying to locate the pictures Mytinger described in the two books she wrote about her South Seas travels. Finally, in 2002, Westmorland happened on a Web site listing the holdings in storage at the University of California's Phoebe A. Hearst Museum of Anthropology in Berkeley. The site, which had gone up just the day before, mentioned 23 paintings by Mytinger.

By then Westmorland had recruited another Seattle-based photographer, Karen Huntt, for the expedition. "When we went to the museum, we said we'd better prepare ourselves, in case the paintings were no good," says Huntt. "When we saw the first one we had tears in our eyes. It was beautiful, and it was in perfect condition."

In the spring of 2005, the two women (above, in the village of Patutiva on the Solomon Island of Vangunu; Westmorland is at left) carried out their plan, leading a five-person team on a two-month journey to the Solomon Islands and Papua New Guinea. Along the way, they visited many of the same places that Mytinger and Margaret Warner had explored in the 1920s and documented how the lives and customs of the local people had changed.

In addition to cameras, computers and other equipment, Westmorland and Huntt brought with them large-format reproductions of Mytinger's pictures. "The visual reference gave the native people an immediate understanding of why we had come and what we were trying to do," Huntt reports. "This made them feel honored and proud, as they could see how respectfully Mytinger had portrayed their ancestors." The pictures also helped the two photographers find the descendants of several of the people the artist had depicted, including the son of a man pictured in her *Marovo Lagoon Family* (page 89).

Now the two adventurers are raising an additional $300,000 for the next stage of the project—a documentary film they plan to produce from the more than 90 hours of footage they shot during their travels and a book and traveling exhibition of their photographs and Mytinger's South Seas paintings. If they succeed, it will be the first major exhibition of Mytinger's work in nearly 70 years.

hang around most of the time and make me look like a beastly flamboyant poodle."

Mytinger was in fact a strikingly lovely strawberry blonde who was known as "Cleveland's most beautiful woman." She paid for her art lessons, first in Cleveland and later in New York City, by posing for several distinguished artists, among them illustrator Charles Dana Gibson, who used her as a model for some of his famous Gibson girls. Within a few years of completing school, Mytinger was earning her living painting portraits of local socialites and doing illustrations for *Secrets* magazine, turning out dewy-eyed beauties to accompany such articles as "When My Dreams Come True."

In December 1920, she married a young Cleveland doctor, George Stober. According to the standard script, it was time for Mytinger to settle into cozy domesticity. She had other ambitions, however, and they reflected the crosscurrents of social change that characterized her era.

Mytinger was part of a generation of American women who in unprecedented numbers sheared off their hair, shortened their skirts and went to work outside the home. Some went farther: during the Roaring Twenties, books and magazines detailed the exploits of "lady explorers." At the same time, World War I and a huge influx of immigrants had dramatically increased American awareness of cultural differences. Along with people who regarded those differences as threatening, there were idealists eager to investigate other cultures as a way of questioning their own. During the 1920s, anthropologist Margaret Mead's *Coming of Age in Samoa* became a top-seller and Chicago's Field Museum sent artist Malvina Hoffman around the world to create some 100 life-size sculptures illustrating the world's "racial types."

Mytinger read every anthropology text she could find and hoped her talent for portraiture could contribute to social science. She started out, according to one newspaper account, by trying to record "the various Negro types" in Cleveland, then went to Haiti and to Indian reservations in Florida and California. But since none of the peoples she encountered represented the "pure types" she said she wanted to paint, she hit upon the idea of going to the relatively unexplored Solomon Islands and New Guinea.

By then, Mytinger's marriage appears to have ended, although no record has been found that she and Stober ever divorced. She apparently traveled under the name of Mrs. Caroline Stober, which is perhaps why Warner was the recipient of at least five proposals from lonely South Seas colonials, while Mytinger doesn't mention receiving any herself. She never married again, but she kept a letter from Stober, undated, that reads in part, "Dear wife and darling girl. . . . If I have been selfish it has been because I have been unable to suppress my emotions and did not want you away from me." Some seven years after Mytinger returned from New Guinea, she wrote to her aunt Caroline that she had left her husband "not because he was a disagreeable person, but because . . . I would never live in the conventional groove of matrimony."

KAREN HUNTT

THE LONG LETTERS Mytinger wrote to friends and family during her travels in the South Seas formed the basis of her two books. *Headhunting in the Solomon Islands* was published in 1942, just as those islands became suddenly famous as the site of fierce fighting between U.S. and Japanese troops. Mytinger's true-life adventure story was named a Book-of-the-Month Club selection and spent weeks on the *New York Times* best-seller list. Her second book, *New Guinea Headhunt*, came out in 1946, also to excellent reviews. "*New Guinea Headhunt*," wrote a critic for the *Philadelphia Inquirer*, "is top-of-the-best-seller-list reading for the unexpected incidents in it that are the stuff of first-rate narration." More than half a century later, her two volumes remain captivating reading, thanks to her lively descriptions of the people and places she and Warner encountered. But some of Mytinger's language, while all too common in her own time, strikes an ugly note today. Her use of terms such as "darky" and "primitive" and her references to children as "pickaninnies" will make modern readers cringe.

Yet she also cast a critical eye on white exploitation of local labor (men were typically indentured for stretches of three years on coconut and rubber plantations for wages of just $30 a year) and on the affectations required to uphold "white prestige." Despite white settlers' complaints about the "primitives'" savagery and stupidity, Mytinger wrote that she found them "polite and clean, and certainly far from stupid. That we could not understand their kind of intelligence did not prove that it did not exist and was not equal to our own in its own way."

Some of Mytinger's most challenging encounters came as she and Warner searched for models among peoples who had no concept of portraiture and considerable suspicions about what the two foreigners might be up to. Mytinger describes a "raw swamp woman" named Derivo who had been drafted to serve as housemaid to the Americans during their visit to a remote station along the Fly River. They convinced her to pose in her short grass skirt and palm-leaf hood, virtually the only clothing native women wore in that rainy country. But Derivo became increasingly fidgety and unhappy, and it finally came out, Mytinger wrote, that the woman believed "this painting business was making her legs sick." No sooner had Derivo stopped posing, the picture unfinished, than she was bitten on the buttocks by a poisonous snake. She recovered, Mytinger reported, but the "episode put us in bad odor in the community, and for a while we could get no other woman to pose for the unfinished figure."

The same Fly River station also produced Mytinger's favorite model, a headhunter named Tauparaupi, whose portrait is on the cover of the artist's second book (p. 80). He was brought to her as part of a group that had been taken prisoner by the authorities for allegedly beheading and eating 39 members of a neighboring village. Two other sitters were the protagonists in a Papuan tragedy. One painting showed a pretty girl named Ninoa being readied for a ceremonial dance by her mother, who carried the girl's tiny baby on her back. Another canvas depicted two young men smoking a native pipe. One of the men was the father of Ninoa's baby, but he refused to marry her and, worse, publicly laughed at her while she was being painted. She left and hanged herself in one of the huts, not out of sorrow but to revenge herself by haunting her disloyal lover. Shortly thereafter, Mytinger wrote, "Ninoa let him have it" when the young man was seriously injured in an accident.

Mytinger often captured details beyond the reach of the era's black-and-white photography—the colors of a massive feather headdress, the subtleties of full-body tattooing and the bright stripes dyed into the women's grass skirts. At the same time, her renderings gave full expression to her models' humanity. But some of Mytinger's depictions are not entirely sound from an anthropological point of view. For ex-

PRESENT-DAY INHABITANTS OF VONAVONA IN THE SOLOMON ISLANDS PADDLE A TRADITIONAL 45-FOOT-LONG WAR CANOE. PROPELLED BY NINE MEN ON EACH SIDE AND ELABORATELY DECORATED, SUCH CANOES WERE USED FOR HEADHUNTING RAIDS AND ATTACKS ON OTHER VILLAGES. BUT THEY HAVEN'T BEEN PUT TO THAT PURPOSE FOR MANY DECADES.

KAREN HUNTT

CELEBRANTS (ABOVE, TOP) GATHERED OUTSIDE PORT MORESBY, PAPUA NEW GUINEA'S CAPITAL, LAST JUNE TO MARK THE 25TH ANNIVERSARY OF THE ORDAINMENT OF A RESPECTED PRIEST. TODAY, MORE THAN TWO-THIRDS OF THE POPULATION IS CHRISTIAN. THE KALUABU SKULL CAVE (ABOVE) IN MILNE BAY PROVINCE IS A REMINDER OF THE NATIVES' HEADHUNTING PAST.

MICHELE WESTMORLAND (2)

ample, while painting a young New Guinea man with elaborate decorative scarring on his back, Mytinger, using pidgin English and sign language, invited him to adorn himself with appropriate items from the local museum. Long after the portrait was completed, she learned that the hat the man had chosen to wear came from a district other than his own and that the pink-and-blue-painted shield he held was actually from New Britain Island. "After that discovery," Mytinger concluded, "the only thing we could be sure was authentic in the picture was the hide of the boy himself."

Moreover, Mytinger's style and training made a certain amount of idealization of her subjects all but inevitable. A surviving photograph of two of Mytinger's New Guinea subjects, an older man nicknamed Sarli and his younger wife, reveals marked disparities between the woman's pinched and disheveled appearance in the photo and her painted countenance. (Sadly, both soon died from a strain of influenza carried to their village by the crew of a visiting American freighter.)

AFTER THREE years in the tropics, Mytinger and Warner were ready for home. But they had only enough money to get to Java, where they lived for almost a year, rebuilding their health while Mytinger repainted her pictures with real oil paints. Finally a job doing illustrations brought in enough money to get them both back to the United States.

Not long after the two women arrived in Manhattan, the city's American Museum of Natural History exhibited Mytinger's paintings. "Glowing with rich hues, vigorously and surely modeled," wrote a critic for the *New York Herald Tribune*, "these paintings reveal, as no flat black-and-white photographs could, the actual gradations in the color of hair, eyes and skin of the various South Sea Island tribes . . . and the vividness of their decorations and natural backgrounds." The pictures next went on display at the Brooklyn Museum and then traveled to the Los Angeles Museum of History, Science, and Art. Newspaper reporters eagerly wrote up the story of Mytinger's expedition, but the country was deep in an economic depression and no museum offered to buy the pictures. "The paintings are still orphaned at the Los Angeles Museum,"

Mytinger wrote to her aunt Caroline in 1932. "Sometime when the finances of the art buying public are restored to normalcy, I may be able to get something for them—but I know it isn't possible now."

Mytinger resumed her career as an itinerant portraitist, traveling to Louisiana, Iowa, Ohio, Washington—wherever commissions could be found. Sometimes a local museum showed her South Seas paintings, but by the 1940s she had packed the pictures away. Some of Mytinger's clients were prominent—members of the Weyerhaeuser timber dynasty, the flour company Pillsburys, novelist Mary Ellen Chase, whose Mytinger portrait still hangs in one of the libraries at Smith College in Massachusetts—but most were not. "I'm not writing and not painting," Mytinger's 1932 letter continued, "just pounding out these small drawings for which I charge twenty-five dollars—and being grateful for orders."

Her financial ambitions were modest. "I like not having much money," she wrote to her aunt in 1937. "I like the feeling that I charge for my pictures only what I think they are worth and not as much as I could get. It gives me a feeling of great independence and integrity, but it also produces a large amount of inconvenience when I want things that are in the capitalist class—like real estate." A home of her own, however, came with the publication of her first book in 1942. The following year, she bought a one-bedroom studio in the California coast town of Monterey, a well-known artists' community. By then she and Warner seem to have gone their separate ways. "Hope you like living alone as much as I do," Mytinger wrote to a cousin. "I treasure it." She remained there for the rest of her life.

In her later years Mytinger lived frugally and painted for her own pleasure, traveling occasionally, enjoying her dogs and cats, entertaining friends and tinkering around her house, which was filled with mosaics, handmade furniture and other results of her handiwork. It appears she walked away from her time in the limelight with relief rather than regret. "She hated careerism and galleries and the ego presentation," says Ina Kozel, a younger artist whom Mytinger befriended. "She definitely was an artist through and through, in her soul and in the way she lived."

Although Mytinger traveled to Mexico and Japan in the 1950s and '60s, and drew and painted studies of the local peoples there, she did not keep those pictures. It was the South Seas paintings that she preserved and kept until a few years before she died. And it is no accident that she gave them to an anthropology—not an art—museum.

As early as 1937 she had begun to question the aesthetic quality of her work. "I will never be a real artist," she wrote to her aunt Caroline. On the evidence of the handful of Mytinger's stateside portraits that have been located, her self-criticism is not far off the mark. They are workmanlike but a bit anemic, painted with skill but not, perhaps, passion. The paintings from the South Seas, by contrast, are far bolder and more intense, with stunning use of color.

In *Headhunting in the Solomon Islands*, Mytinger lamented that "though we had set out with the very clear intention of painting *not* savages but fellow human beings, the natives had somehow, in spite of us, remained strangers, curiosities." Perhaps that was unavoidable, given the vastness of the cultural divide between the young American and her subjects. Yet her youthful optimism that this gap could be bridged is one reason her island paintings are so powerful.

Another is Mytinger's recognition that she was recording a world that was vanishing even as she painted it. Her last picture in the series, done in Australia, on the way to Java, depicted an aboriginal burial place, "a nice quiet grave with a solitary figure squatting beside the colorful graveposts," she wrote. "It was symbolical. . . . For this is the twilight hour for the earth's exclusive tribes."

IN THE VILLAGE OF PATUTIVA ON THE SOLOMON ISLAND OF VANGUNU, MICHELE WESTMORLAND (BELOW, RIGHT) WAS ABLE TO LOCATE UJIAH MAIKE (BELOW, LEFT), WHO IS THE SON OF THE MAN WITH AN AX AT FAR RIGHT IN MYTINGER'S PAINTING *MAROVO LAGOON FAMILY* (BOTTOM). THE MAN IN THE WHITE HAT IN THE PAINTING WAS MAIKE'S GRANDFATHER.

KAREN HUNTT

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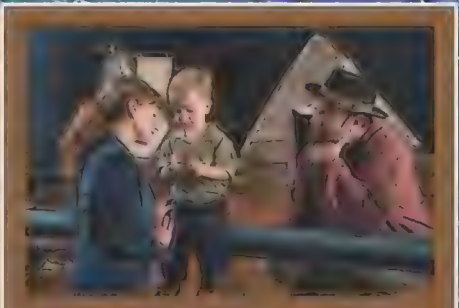

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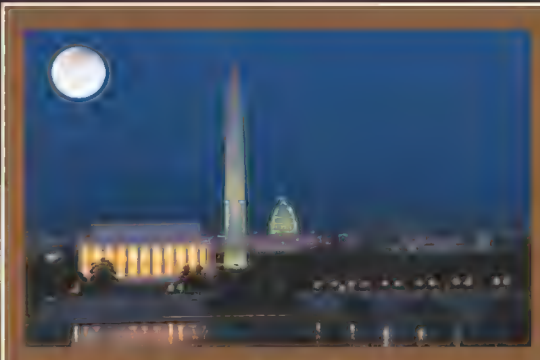

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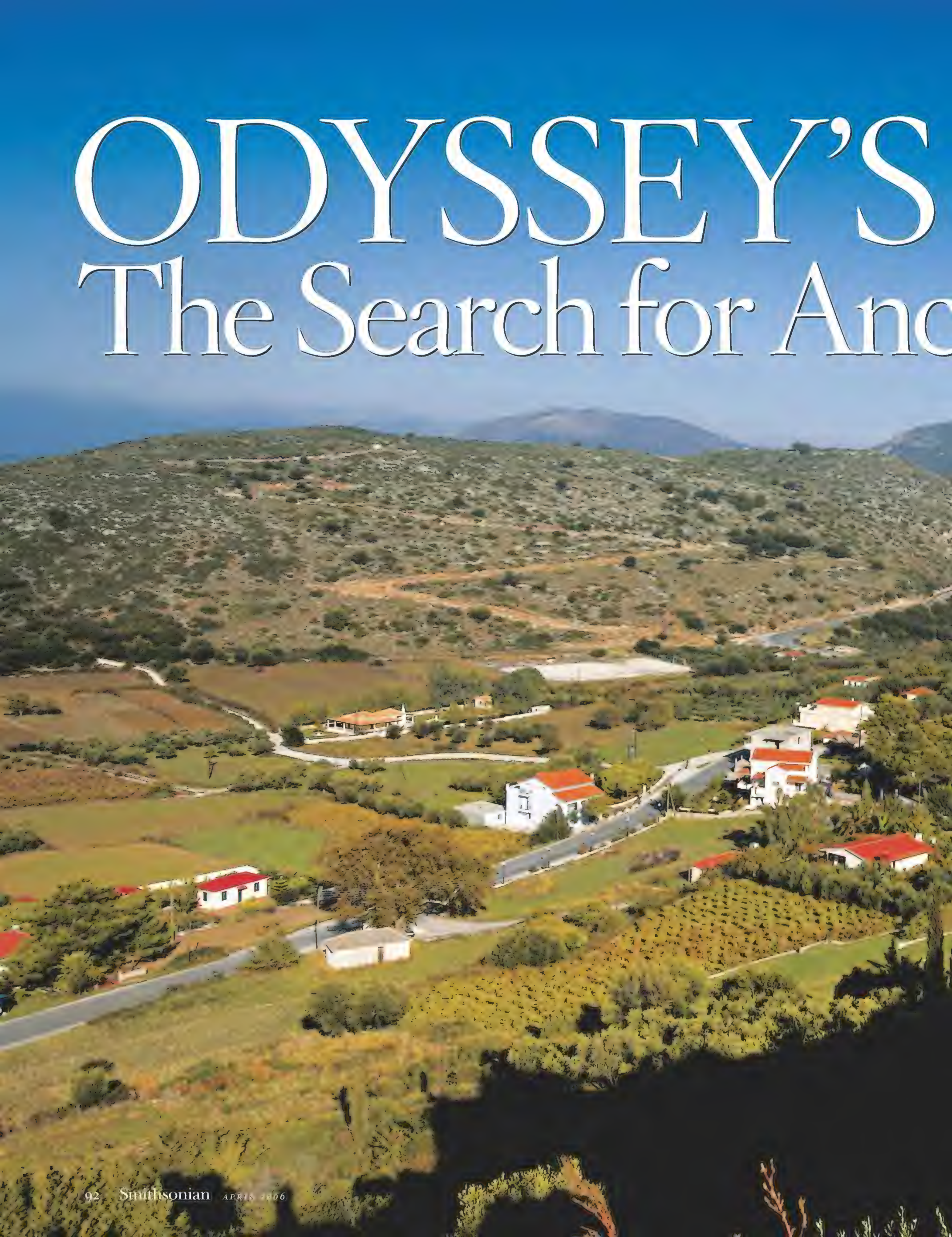

END?
cient Ithaca

AMATEUR SCHOLAR ROBERT BITTLESTONE SAYS THAT THE VALLEY (BELOW) FORMING AN ISTHMUS ON CEPHALONIA WAS ONCE A SEA CHANNEL DIVIDING THE ISLAND IN TWO. "ACROSS THAT VALLEY," HE SAYS, "LAY THE ANCIENT ISLAND OF ITHACA," HOME TO ODYSSEUS (DEPICTED C. 250).

A British researcher believes he has at last pinpointed the island to which Homer's wanderer returned

BY FERGUS M. BORDEWICH
PHOTOGRAPHS BY JEFFREY AARONSON

MANAGEMENT CONSULTANT BITTLESTONE (ON CEPHALONIA) WORKED OUTSIDE CONVENTIONAL SCHOLARSHIP WHEN HE PROPOSED A NEW LOCATION FOR FABLED ITHACA. "THE OLD EXPLANATIONS JUST FELT UNSATISFACTORY," HE SAYS. "I KEPT WONDERING: WAS THERE POSSIBLY A RADICAL NEW SOLUTION TO THIS?"

ROBERT BITTLESTONE is standing above the village of Petrikata, looking over red-tile roofs down upon a narrow isthmus that connects the two parts of the island of Cephalonia, off Greece's western coast. In the valley below, farmers in overalls are harvesting olives. A light breeze carries the scent of oregano and thyme. "This looks like solid ground that we're standing on," Bittlestone says. "But everything under us is rockfall. Across that valley was the ancient island of Ithaca."

Bittlestone, a management consultant by profession, believes he has solved a mystery that has bedeviled scholars for more than 2,000 years. In *Odysseus Unbound*, published this past October by Cambridge University Press, he argues that a peninsula on the island of Cephalonia was once a separate island—Ithaca, the kingdom of Homer's Odysseus some 3,000 years ago. He believes that the sea channel dividing the two islands was filled in by successive earthquakes and landslides, creating the peninsula of Paliki, as it is known today.

Like Heinrich Schliemann, the businessman who discovered the site of ancient Troy in the 1870s, and Michael Ventris, the architect who deciphered the written language of Minoan Crete in the 1950s, the 54-year-old Bittlestone is part of an honorable tradition of inspired amateurs who have made extraordinary discoveries outside the confines of conventional scholarship. "Bittlestone's insight is brilliant," says Gregory Nagy, director of the Center for Hellenic Studies, in Washington, D.C. "He has done something very important. This is a real breakthrough convergence of oral poetry and geology, and the most plausible explanation I've seen of what Ithaca was in the second millennium B.C. We'll never read the *Odyssey* in the same way again."

Even more provocatively, Bittlestone, who was able to draw upon sophisticated technological tools unavailable to scholars before him, believes that events like those described in the *Odyssey* may well have taken place, and that telltale landmarks from the hero's adventures on Ithaca can be found on Cephalonia's Paliki peninsula. "I find most events that are described on the island perfectly credible," he says, adding that the chapters recounting Odysseus' fantastical adventures among magical figures—the sea monster Scylla and man-eating whirlpool Charybdis, or the enchantress Circe—obviously owe a great deal to the poetic imagination.

"By far the most important part of this is the argument that modern Paliki was ancient Ithaca," says James Diggle, a professor of Greek and Latin at Cambridge University. "Of this, I haven't the slightest doubt. It's irresistible, and supported by geology. The other part is more speculative. But once you go over the terrain, there is an extraordinary match."

SINCE ANCIENT TIMES, the location of Homer's Ithaca has been one of literature's great conundrums. The third-century B.C. geographer Eratosthenes sighed, "You will find the

Writer FERGUS M. BORDEWICH *writes on history and culture. Photographer* JEFFREY AARONSON *is based in Basalt, Colorado.*

P. 93 MUSEE DU BARDO, TUNISIA / BRIDGEMAN ART LIBRARY

scene of the wanderings of Odysseus when you find the cobbler who sewed up the bag of the winds." Some dismissed Homer's geography as a poet's clueless guesswork. As the renowned classicist Bernard Knox once put it, "When Homer's characters move to mainland Greece and its western offshore islands, confusion reigns."

Modern scholars have proposed numerous locations, some as far afield as Scotland or the Baltic. The most obvious candidate was the present-day island of Ithaca, which lies east of Cephalonia. But it doesn't fit Homer's description:

Around her a ring of islands circle side-by-side,
Doulichion, Same, wooded Zachynthos too, but mine
lies low and away, the farthest out to sea,
rearing into the western dusk
while the others face the east and breaking day.

Scholars have long agreed that ancient and modern Zachynthos are one and the same. Similarly, ancient Same was certainly the main body of modern Cephalonia, where a large town named Sami still exists. But modern Ithaca—a few miles east of Cephalonia—was hardly "the farthest out to sea," and its mountainous topography doesn't fit Homer's "lying low" description. (Bittlestone believes ancient Doulichion became modern Ithaca after refugees came there following an earthquake or other disaster and changed its name.) "The old explanations just felt unsatisfactory," says Bittlestone. "I kept wondering, was there possibly a radical new solution to this?" Back home near London, he pored over maps and satellite images. If Paliki had once been a separate island, he mused, it would indeed have been the one "farthest out to sea."

Then Bittlestone struck gold. Perusing the section on Cephalonia in the ancient author Strabo's *Geography*, the most important source of its kind for ancient geographical knowledge, Bittlestone came across the following passage: "Where the island is narrowest it forms a low isthmus, so that it is often submerged from sea to sea." According to Strabo's second-century B.C. sources, Cephalonia had been, at times, two islands. Strabo's description suggested that the

"We'll never read the *Odyssey* in the same way again," says classics scholar Gregory Nagy.

THE RUGGED LANDMASS OF CEPHALONIA (IN A SATELLITE IMAGE) CONSISTS OF TWO SEGMENTS: THE ISLAND AND ITS PENINSULA. BITTLESTONE BELIEVES THE NARROW ISTHMUS (CIRCLED IN ORANGE) EMERGED FROM LANDFILL, DEPOSITED AS RUBBLE THUNDERED DOWN DURING CENTURIES OF EARTHQUAKES. "HUGE CHUNKS OF MOUNTAIN BROKE LOOSE," HE SAYS. "THE SCALE OF IT IS MIND-BLOWING." AT BOTTOM RIGHT LIES THE MODERN ISLAND OF ITHACA, WHICH ANCIENT CHRONICLERS CALLED DOULICHION.

CORBIS

A THIN CRESCENT OF BEACH AT IDYLLIC ATHERAS BAY (ABOVE) MAY BE THE PLACE WHERE THE WANDERER ODYSSEUS AT LAST CAME ASHORE AS HE HEADED HOME. HE MADE LANDFALL, HOMER NOTED, IN A COVE WITH "TWO JUTTING HEADLANDS, SHEARED OFF AT THE SEAWARD SIDE."

ALL: JEFFREY AARONSON / NETWORK ASPEN (3)

channel that separated Cephalonia from its present-day peninsula had gradually become filled in. Much remains to be proved, of course. "Bittlestone is claiming too much on the geological side, I think," says George L. Huxley, professor emeritus of Greek at Queen's University, in Belfast. "If the 'channel' really was a fissure, I don't believe that it could have been created in the way he suggests."

BITTLESTONE, HOWEVER, has been convinced from the start that he was on the right track. In 2003, he traveled to Cephalonia, rented a jeep and began crisscrossing the isthmus, a narrow, rugged neck of land connecting the larger landmass to the Paliki peninsula. He was looking, he says, "for traces of a former channel" when he noted zigzagging ravines running the length of the five-mile-long isthmus. The chasms, up to 300 feet deep in some places, suggested the possible route of an ancient watercourse.

Bittlestone had already learned that Cephalonia lay on one of the most unstable geologic fault lines in the world. For eons, the African and Eurasian tectonic plates have been colliding a few miles off the coast of Paliki, creating a steady upthrust that periodically explodes in violent earthquakes. The worst in modern times, in 1953, leveled almost every building on the island, causing 90 percent of its residents to flee. Perhaps, Bittlestone speculated, a giant earthquake had thrust "Strabo's channel" (as he came to call it) up above sea level, leaving it literally high and dry.

In 2003, Bittlestone contacted John Underhill, a professor of stratigraphy at the University of Edinburgh. Underhill, who has studied the geology of Cephalonia for more than 20 years, told him that geological uplift on such a large scale was impossible. But he was sufficiently intrigued to meet Bittlestone on Cephalonia for a firsthand look.

Underhill immediately noted that the half-mile-wide isthmus was a geologic "mess" of rocks of different ages—evidence of avalanches from the steep mountains on either side. As landslide followed landslide over the centuries, the debris could have extended farther across the isthmus, layer upon layer, to create the rugged hills. "I thought it would be easy to disprove Bittlestone's thesis," he says, "but it wasn't. Suddenly I thought, crikey, there might really be a channel down there."

Pending final tests, Underhill concluded that there was indeed geological evidence for a channel across the isthmus. "The only credible explanation for this geological formation is that some of it slid down from the mountain above."

Bittlestone has no doubts. "A landslip with massive kinetic energy inundated everything," he says. "Huge chunks of mountain broke loose and thundered down. The scale of it is mind-blowing."

THERE IS A DEEP SEDUCTIVENESS to the second, yet untested, part of Bittlestone's theory, that the *Odyssey*'s land-

UPON HIS RETURN TO ITHACA, ODYSSEUS SOUGHT THE HUT OF HIS SWINEHERD; EVEN TODAY, NUMEROUS SPRINGS (ABOVE, LEFT) ARE USED TO WATER PIGS HERE. NEARBY, KASTELLI HILL, YET TO BE EXCAVATED BY ARCHAEOLOGISTS, CONTAINS BRONZE AGE SHARDS EMBEDDED IN ROCK.

scape can still be found on Cephalonia, like a palimpsest beneath a medieval manuscript. But attempting to identify actual places that fit a nearly 3,000-year-old narrative does present problems. For one, it is by no means certain that individuals in the poem—Odysseus; his wife, Penelope; son, Telemachus; the suitors—even existed. Gregory Nagy is cautious. "I'm completely convinced that Paliki was Ithaca in the second millennium B.C.," he says. "But the poem is not reportage. We should not force it to be a road map for a set of real events."

Bittlestone has an answer for that. "Because the landscape is real, does it mean that Odysseus was a real person? Not necessarily. But it is plausible that there was a Bronze Age chieftain around whom these stories grew. I also don't think Homer invented an imaginary landscape. There was a real Troy, a real Mycenae, a real Sparta, all of which have been rediscovered by archaeologists."

Most scholars agree that the *Odyssey* was first put into writing in the 8th or 7th century B.C. But some believe, and Bittlestone concurs, that its core narrative dates as far back as the 12th century B.C., just after the Trojan War. "I am convinced," Bittlestone says, "that in Ithaca, Homer describes a real place, and I think that he talked about locales that people knew and could recognize. His audience could say, 'Oh, yeah, I know that cave, that mountain, that bay.'"

"In Ithaca, Homer describes a real place. I think he talked about locales people knew and recognized."

Cambridge University's James Diggle is cautiously supportive. "We cannot dismiss the possibility of Bittlestone's approach being valid," he says. "Every place that he locates in the book can easily be located in northern Paliki—they all work. If you accept that the channel exists, and that Ithaca is Paliki—the external geography, so to speak—then you cannot dismiss the possibility that the other passages may reflect the internal geography of Ithaca."

ON A CRISP DAY IN OCTOBER, Bittlestone leads me along the route that he thinks Odysseus may have followed upon his return to Ithaca. We begin at Atheras Bay, a crescent of beach enfolded by terraced groves of olive trees. Bittlestone believes this could have inspired the description of Phorcys Bay, where Odysseus—or his prototype—was put ashore by

Immortal Epic

Homer's masterpiece constitutes a touchstone of Western tradition

Western literature began with the Homeric epics. It may fairly be said that no book apart from the Bible has had such a lasting influence on Western culture as the *Odyssey*, the tale of a Bronze Age king who ruled more than 30 centuries ago and his long journey home from Asia Minor and the Trojan War. The very title of Homer's poem has given us our definition of an epic journey—an "odyssey"—and in Odysseus our paradigm of the restless adventurer. In ancient times, the *Odyssey* and the *Iliad* were venerated for educating the young. In the Middle Ages, Homer's description of Odysseus' visit to Hades inspired Dante's descent into the inferno, while the Odyssean archetype of the indomitable wanderer has persisted down to modern times in works as diverse as James Joyce's *Ulysses*, Jack Kerouac's *On the Road*, Charles Frazier's *Cold Mountain*, and even the film *O Brother, Where Art Thou?* in 2000.

ODYSSEUS SLEW THE SUITORS WHO COVETED HIS WIFE AND KINGDOM (DEPICTED BY HENRY MOORE, 1944).

Although most readers of the *Odyssey* likely recall its hero's confrontations with bizarre creatures such as the one-eyed Cyclops, such episodes actually account for less than a third of the poem. Most of it is concerned with the return of Odysseus, after a 20-year absence, to find that a small army of aggressive suitors has taken over his palace, laid siege to his long-suffering wife, Penelope, and brutishly mistreated his despairing son, Telemachus. Penelope and Telemachus have all but given up hope of ever seeing Odysseus again. Unknown to the suitors, however, Odysseus, guided by the goddess Athene, lands on Ithaca's shores. Disguised as a ragged beggar, Odysseus makes his way to the hut of a loyal swineherd, Eumaeus, where he is reunited with Telemachus. Together they hatch a plan. With Athene's assistance, they trap the suitors in the palace's great hall, then slay them to the last man. Order is reestablished, Penelope's humiliation is avenged and Odysseus is restored to his hearth and to his throne. It is one of the greatest poems in all literature, rich with psychological insight into the stresses of abandonment, jealousy, pride and shame.

"It's a fabulous book, so lyrical," says Bittlestone, who first encountered it as a schoolboy, at Ashdown House in Sussex, where he grew up the youngest child of a self-made banker. "I cry at some sections." After studying economics at Cambridge, Bittlestone founded a risk-analysis firm specializing in detecting financial storms on the horizon. In 1998, in preparation for a family trip to Greece, he happened to reread the *Odyssey*. Casual interest soon grew into obsession. —*F.B.*

friendly Phaeacian mariners. Pointing to the mouth of the harbor, Bittlestone says it fits Homer's description perfectly, "with two jutting headlands, sheared off at the seaward side."

It was here that Athene appeared to Odysseus in the guise of a handsome young shepherd and commanded him to find the hut of the loyal swineherd Eumaeus:

You'll find him posted beside his swine, grubbing round
by Raven's Rock and the spring called Arethusa,
rooting for feed that makes pigs sleek and fat,
the nuts they love, the dark pools they drink.

"So," says Bittlestone to me now, "let's go see the pig farm." We turn our backs on the bay and, bouncing in a jeep, follow "a rough track leading through the woods and up to the hills," as Homer puts it. A herd of goats stares at us with yellow, inexpressive eyes, then explodes in panic, bounding away down the hillside. Soon we pass through the village of Atheras, its stucco houses painted white and yellow, its gardens lush with bougainvillea, morning glories and lemon trees. The similarity between the ancient place name Arethusa and the modern Atheras tells Bittlestone he's on the right track. "If Arethusa spring was in the vicinity of the village of Atheras," he says, "then Eumaeus' pig farm and Raven's Rock should not be far away."

According to Homer, the swineherd's hut was on ground "exposed to view all round," with room for some 600 sows and 360 boars behind walls made of "quarried stones" and topped with tangles of wild pear, a technique that some Greek herdsmen still use today. In the epic, Odysseus—disguised in "squalid rags, ripped and filthy"—spends a day or two at the pig farm, then tells Eumaeus that he's going to the palace to beg for food. Since Odysseus then asked Eumaeus to guide him there, the palace must not have been in sight of the pig farm—though it had to be near enough that Eumaeus could go there and back twice in a single day.

We turn onto a stony track and stop at an old well on a small, circular terrace. "Everywhere along here, you find springs and wells," says Bittlestone. "Whether or not this one is the actual Bronze Age spring of Arethusa is less important than the fact that a water-bearing fault line runs just below the surface in exactly the right place for a spring with Homer's 'dark water' to emerge here."

Next we follow an old sunken path through an eerie forest of stunted wild oak trees, emerging into daylight to find an animal enclosure fenced with piled-up stones. "Clearly this area has been used for keeping animals for a long, long time," Bittlestone tells me. "If you have hundreds of pigs, as Eumaeus did, you need a lot of water, and this is where you would find it." Just past the pig farm, a crag that Bittlestone designates as Raven's Rock looms over the trail. We catch sight, far below us, of the deep Gulf of Argostoli, and the now silted-up harbor from which Odysseus and his 12 warships could have departed for the Trojan War. From here, too, we can see where his palace might have stood, on the slopes of the conical hill of Kastelli, our destination.

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KASTELLI HILL (FOREGROUND) MAY CONTAIN RUINS OF AN ANCIENT CHIEFTAIN'S STRONGHOLD. COULD IT BE THE PALACE OF ODYSSEUS?

Half an hour after leaving the pig farm, we park in an olive grove and begin climbing Kastelli's steep 830-foot-high slopes, through a dense carpet of prickly underbrush. The bells of unseen goats ring in our ears. We scramble over lichen-crusted terraces that might once have supported houses, and then, near the hillcrest, clamber over traces of a defensive wall and heaps of jagged stones.

Somewhere beneath our feet, perhaps, lie ruins of the "high-walled courtyard" where the suitors gathered and the great hall with its pillars of cypress, couches, chairs and raucous banquets. Somewhere here, perhaps, the despairing Penelope worked at her loom, spinning funeral cloth for Laertes, Odysseus' aged father. (She then secretly unraveled the cloth every night, having promised the suitors that she would wed one of them as soon as the cloth was completed.) Here, perhaps, with "a shield of fourfold hide" and a plumed helmet on his "heroic head," Odysseus set to his bloody work. As Homer puts it, "Ghastly screams rose up as men's heads were smashed in, and the whole floor ran with blood." In the end, corpses lay heaped in the dust "like fishes the fishermen have dragged out of the grey surf in the meshes of their net onto a curving beach, to lie in masses on the sand longing for the salt water till the bright sun ends their lives."

Bittlestone prowls the windswept summit, pointing out shards of ancient pottery—fragments of pots, wine jugs and oil jars, compacted amid generations of goat droppings and dust, the last traces of an ancient town and perhaps a palace.

Of course, the odds of finding artifacts that proclaim "Odysseus was here" are slim. But geological tests can confirm the existence and age of a channel beneath the isthmus. Core samples can reveal the geological substructure beneath the rockfall. Radiocarbon analysis can measure the age of organic matter that may be submerged beneath the landfill, and geologists may attempt to analyze the debris from different landslides. Says John Underhill, "We're going to throw as much science at this as we possibly can."

> "We don't know what lies under these tumbled stones, but something was surely going on here."

Clearly, based on preliminary archaeological examinations, both the surviving walls and some of the pottery dates back to the Bronze Age (c. 2000-1100 B.C.). Bittlestone gazes across the craggy landscape of Cephalonia, his blue eyes gleaming with excitement. "We don't know what lies under these tumbled stones," he says, as much to himself as to me, "but something was surely going on here."

SAY WA

This is the sound of [illegible] dropping.

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To her delight, social worker-turned-scientist Patricia Wright has found the mischievous Madagascar primates to be astonishingly complex

BY RICHARD CONNIFF

FOR TH LEM

ON A STEEP SLOPE, hip deep in bamboo grass, in the heart of the Madagascar rain forest she saved, Patricia Wright is telling a story. "Mother Blue is probably the oldest animal in this forest," she begins. "She was the queen of group one, and she shared her queendom with what I think was her mother."

The animals she is describing are lemurs, primates like us. They are the unlikely product of one of nature's reckless little experiments: all of them—more than 50 living lemur species—derive from a few individuals washed from the African mainland into the Indian Ocean more than 60 million years ago. The castaways had the good luck to land on Madagascar, an island the size of Texas 250 miles off the southeast coast of Africa. And there they have evolved in wild profusion.

Wright, a late-blooming primatologist from the State University of New York at Stony Brook, has made lemurs her life, tracking bamboo lemurs and sifaka lemurs that live in a handful of social groups in Ranomafana National Park. The story she is telling, to a work party from the volunteer group Earthwatch, is one episode in a running saga from 20 years of field research in Madagascar. If her tone evokes a children's story, that may be apt. Wright is a matriarchal figure, with straight auburn hair framing a round face, slightly protuberant eyes under padded eyelids, and a quick, ragged grin. The business of conservation has made her adept at popularizing her lemurs, using all the familiar plotlines of wicked stepmothers, families broken up and reunited, love, sex and murder.

A female sifaka lemur perches on a branch over Wright's head. The graceful creature, a little bigger than a house cat, has a delicate, foxlike snout and plush black fur with a white patch on her back. Her long limbs end in skeletal fingers, curved for gripping branches, with soft, leathery pads at the tips. She turns her head, her stark, staring, reddish orange eyes glowing like hot coals. Then she bounds away in a series of leaps, a dancer in perfect partnership with the trees.

Wright first visited the town of Ranomafana in 1986, basically because she needed a bath. She was looking for the greater bamboo lemur, a species no one had seen in decades. Ranomafana had hot springs—and also a rain forest that was largely intact, a rarity on an island where the vast majority of forest has been destroyed. In the steep hills outside town, Wright spotted a bamboo lemur and started to track it, the first step in getting skittish wild animals to tolerate human observers. "You have to follow them and follow them and follow them, and they're very good at hiding," she says. "It's kind of fun to try to outwit an animal. When they decide that you're boring, that's when you've won."

The lemur Wright followed turned out to be an entirely new species, the golden bamboo lemur, which even locals said they had not seen before. (Wright shares credit for the discovery with a German researcher working in the area at

"I DON'T WANT TO BE A PRIMATOLOGIST WHO STUDIES EXTINCT SPECIES," PATRICIA WRIGHT HAS SAID OF HER WORK RESEARCHING—AND PROTECTING—LEMURS, AMONG THE MOST DIVERSE PRIMATES. (A VERREAUX'S SIFAKA LEMUR, RIGHT, IN MADAGASCAR, CAN LEAP 30 FEET.)

E LOVE OF
MURS

the same time.) On a return trip, she also found the greater bamboo lemur she'd originally been looking for.

As Wright was beginning a long-term study in Ranomafana of both the bamboo lemurs and the sifakas in 1986, she came face to face with a timber baron with a concession from Madagascar's Department of Water and Forests to cut down the entire forest. Wright decided to try and preserve the lemurs' habitat. She was married, raising a young daughter and employed at Duke University as a new faculty member. Friends warned that letting "this conservation stuff" distract her from research would hurt her career. "But I couldn't have it on my conscience," she says now, "that a species I had discovered went extinct because I was worried about getting my tenure."

Over the next few years, she pestered the timber baron so relentlessly that he abandoned the area. She lobbied government officials to designate Ranomafana as the nation's fourth national park, which they did in 1991, protecting 108,000 acres, an area five times the size of Manhattan. She also raised millions of dollars, much of it from the U.S. Agency for International Development, to fund the park. She oversaw the hiring of local villagers, construction of trails and training of staff. She sent out teams to build schools and to treat diseases such as elephantiasis and roundworm, which were epidemic around the park. Her work won her a MacArthur Foundation "genius" grant, and Stony Brook wooed her away from Duke with a job offer that allowed her to spend even more time in Madagascar.

"DON'T GO!" BUT WRIGHT WAS UNDAUNTED: SHE'D BEEN FOLLOWING TWO MONKEYS AROUND THE FOREST IN CAPE COD.

Along the way, Wright found time to get to know her lemurs as individuals, particularly the sifakas in five territorial social groups, each of which had three to nine lemurs. Pale Male, in group two, for instance, "was a great animal, very perky," she tells the volunteers. "He would play all the time with his sister, roughhouse around, go to the edges of the territory. And then one day, Pale Male disappeared. A lemur's lost call is a mournful whistle, and his sister gave it all day long." Pale Male had moved away to sifaka group three for an interlude of lemur bliss with the resident female, Sky Blue Yellow, producing a son named Purple Haze.

Lemurs typically sleep on the upper branches of trees. The fossa (pronounced "foosa"), a nocturnal mongoose, has a knack for finding them there. It creeps up a tree, its lean body pressed close to the bark, then leaps out and catches a lemur by the face or throat with its teeth. After a fossa struck one night, Sky Blue Yellow was gone. Pale Male, badly battered, soon also disappeared, leaving behind his 2-year-old son, Purple Haze. Six months passed by the time Pale Male came back bringing a new female into group three, and Wright was there to witness the reunion with Purple Haze. "That baby was so excited to see that father, and that father was so excited, and they just groomed and groomed and groomed."

Ranomafana, it turned out, was home to more than a dozen lemur species, all with behaviors worth studying. Wright went on to build an independent research station there called Centre ValBio (short for a French phrase meaning "valuing biodiversity"), which now employs more than 80 people and accommodates up to 30 students and researchers.

A few prominent academics say privately that Wright has not produced enough solid science, or trained enough students from Madagascar as full-time scientists, given the funding she has received. (Wright points to more than 300 publications from research at Ranomafana.) Some conservationists complain that she steers initiatives to Ranomafana, sometimes at the expense of other parts of the island. "A lot of people are jealous of her," says Conservation International president Russ Mittermeier, who gave Wright the grant that brought her to Ranomafana. "But, boy, give me 100 Pat Wrights and we could save a lot of primates."

WRIGHT WAS a Brooklyn social worker when her career as a primatologist got its start with a purchase she describes now as "almost a sin." Before a Jimi Hendrix concert at the Fillmore East in Manhattan, Wright and her husband visited a nearby pet shop. A shipment had just arrived from South America, including a male owl monkey, says Wright, "and I guess I fell in love with that monkey."

Selling wild-caught monkeys is illegal today. But this was 1968, and the monkey, which she named Herbie, took up residence in the apartment where the Wrights also kept a large iguana, a tokay gecko and a parrot. Monkey and parrot soon developed a mutual loathing. One night, the monkey "made a leap for the parrot, and by the time we got the lights on, he was poised with his mouth open about to bite the back of its neck." The parrot was sent to live with a friend.

Wright began to read everything she could about Herbie's genus, *Aotus*, nocturnal monkeys native to South and Central America. After a few years, she decided to find a mate for him. She took a leave of absence from her job and headed to South America for three months with her husband. Since no one wanted Herbie as a houseguest, he had to go too.

"I thought Herbie would be excited to see his own kind," Wright says of the female she eventually located in a village on the Amazon. But he regarded the female with an enthusiasm otherwise reserved for the parrot. Wright ended up chasing the two of them around a room to corral them into separate cages. Later, this menagerie moved into a 25-cent-a-day room in Bogotá. "I think the truth is, it was 25 cents an *hour* because it was a bordello. They thought it was hilarious to have this couple with two monkeys."

Back in New York, both Wright and the female owl mon-

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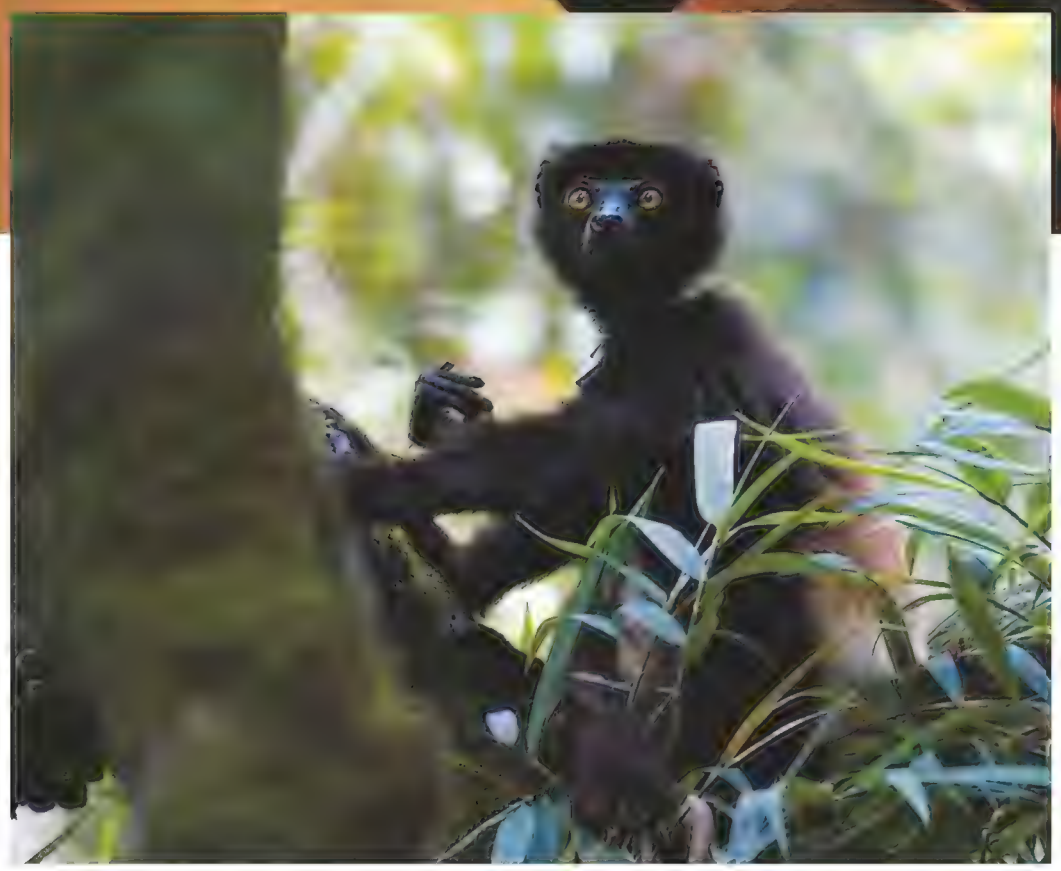

A RESEARCH STATION RUN BY WRIGHT IN RANOMAFANA (ABOVE, WRIGHT CELEBRATES THE OPENING IN 2003 WITH LOCAL MUSICIANS) HAS PUT LEMURS ON THE MAP. THE ONE CLOSEST TO WRIGHT'S HEART IS MOTHER BLUE (LEFT, LOOKING FOR FRESH FIGS).

DAVID HARING; JUKKA JERNVAL

key gave birth a few years later to daughters. Herbie turned into a doting father, returning his infant to its mother only for feeding. Wright stayed home with her own baby while her husband worked, and dreamed about someday discovering "what makes the world's only nocturnal monkey tick." Meanwhile, she sent off hapless letters—Brooklyn housewife yearns to become primatologist—to Dian Fossey, Jane Goodall and the National Geographic Society.

Eventually she discovered that Warren Kinzey, an anthropologist at the City University of New York, had done fieldwork on another South American monkey species. Wright prevailed on Kinzey to talk with her about how to study monkeys, and she took careful notes: "Leitz 7 x 35 binoculars, Halliburton case, waterproof field notebook . . ." Then she persuaded a philanthropist from her hometown of Avon, New York, to pay for a research trip to study *Aotus* monkeys in South America.

"Don't go!" said Kinzey, when Wright phoned to say goodbye. An article had just arrived on his desk from a veteran biologist who had been unable to follow *Aotus* at night even with the help of radio collars. "You don't have a radio collar," said Kinzey. "I don't think you should waste your money."

But Wright was undaunted. She'd been spending summers at a family cottage on Cape Cod, following her two monkeys as they wandered at night through the local forest. "It was just fun to see the things they would do in the middle of the night. They loved cicadas, and there was a gypsy moth outbreak one year and they got fat. They saw flying squirrels." So she told Kinzey, "I think I can do it without radio collars, and I've just bought a ticket, so I *have* to go."

A few days later, she and her family climbed out of a bush plane in Puerto Bermudez, Peru, where her daughter Amanda, age 3, shrieked at the sight of a Campa tribesman with face paint and headdress. Wright said, "*¿Donde está el hotel turista?*" ("Where is the tourist hotel?"), and everybody within earshot laughed. The family moved in with some farmers before heading out into the field.

The local guides were nervous about going into the rain forest at night to help her hunt for owl monkeys. So Wright headed out alone, leaving behind a Hansel-and-Gretel trail of brightly colored flagging tape. She got lost anyway and began to panic at the thought of deadly fer-de-lance snakes and jaguars. "And then I heard this familiar sound, and it was an owl monkey. And I thought, OK, I can't act like I'm scared to death. I'll act like a primatologist. There are fruits dropping down in four places, so there are probably four monkeys. And I just started writing anything so I didn't have to think."

Near dawn, she heard animals stampeding toward her, and she scrambled up a tree for safety. "I heard this sound above me, and it was an owl monkey scolding and urinating and defecating and saying, 'What are you doing in my territory?' And by the time he finished this little speech, it was daylight. And then he went into this tree and his wife followed right behind him, and I thought, Oh, my god, that's their sleep tree."

She wrapped the tree with tape, "like a barber pole," so she could find it again, and made her way to camp. Six months later, back in the United States, she presented Kinzey with her study and got it published in a leading primatology journal. She also applied to graduate school in anthropology. In her second week of studies at the City University of New York, Wright and her husband separated.

"FEMALES DON'T DO A LOT OF STRUTTING AROUND SAYING 'I'M THE GREATEST.'"

THE MOTHER OF ALL LEMURS—the castaway species that somehow found its way to Madagascar—was probably a small, squirrel-like primate akin to the modern-day bush baby in central Africa. Prosimians (a name literally meaning pre-monkey, now used as a catchall category for lemurs, lorises and bush babies) tend to have proportionally smaller brains than their cousins, the monkeys and apes, and they generally rely more on scent than vision. There are now ring-tailed lemurs, red-bellied lemurs, golden-crowned lemurs and black-and-white ruffed lemurs—so many different lemurs that Madagascar, with less than half a percent of the earth's land surface, is home to about 15 percent of all primate species.

Among other oddities, the population includes lemurs that pollinate flowers, lemurs with incisors that grow continuously like a rodent's, lemurs that hibernate—unlike any other primate—and lemurs in which only the females seem to hibernate. The smallest living primates are mouse lemurs, able to fit in the palm of a human hand. An extinct lemur as big as a gorilla roamed the island until about 350 years ago. Lemur species also display every possible social system, from polygyny (one male with multiple female partners) to polyandry (one female with multiple males) to monogamy.

Females are usually in charge. Males acknowledge the female's dominance with subtle acts of deference. They wait till she finishes eating before going into a fruit tree. They step aside when she approaches. They cede her the best spot in the roosting tree at night.

Female dominance remains one of the great unsolved mysteries of lemur behavior. Food sources are scattered on Madagascar, and highly seasonal. It may be that females need to control the limited supply to meet the nutritional demands of pregnancy and lactation. Big, tough, high-maintenance males would likely consume too many calories, Wright theorizes, and provide too little compensatory protection against a flash-in-the-night predator like the fossa. But whatever the explanation, the lemur system of low-key female leadership has become a source of deep, playful empathy for Wright.

Dominant females don't usually practice the sort of relentless aggression that occurs in male-dominated species such as baboons, macaques and chimpanzees, she says. They typically commit only about one aggressive act every other day, and "they do it expeditiously. They run up and bite or cuff the individual, and it's very effective. They don't do a lot of strutting around saying, 'I'm the greatest.'" For every aggressive act, females engage in perhaps 50 bouts of friendly grooming, according to Wright's observations. In fact, grooming is so important to lemurs that it has shaped the evolution of their teeth. Whereas our lower canines and incisors stand upright, for biting and tearing, theirs stick straight out and have evolved into a fine-toothed comb plate, for raking through one another's hair.

Wright herself exerts dominance in the benign style of lemurs. "Zaka," she says one afternoon, taking aside one of her best fieldworkers for a sort of verbal grooming. "I have to tell you about how important you are. When we were looking at all the data from the survey you did, it was very nice, very nice." She is also a shrewd consensus builder, adept at winning local support. When she sends a student into the field, she urges him to hire local villagers as porters and guides, so they will see that the park can put money in their pockets. "I didn't know how to make a national park," Wright says. "What I did was brainstorm with the Malagasy [as people from Madagascar are known] here and with the people in the Department of Water and Forests. It was always a group effort. They had to be a part of it, or it wasn't going to work at all."

A FAVORITE OF ZOOS, RING-TAILED LEMURS IN THE WILD (OPPOSITE) PREFER THE GROUND TO TREETOPS, MAKING THEM EASIER TO STUDY. OTHER LEMURS, PARTICULARLY NOCTURNAL ONES, CAN BE DOWNRIGHT ELUSIVE. SCIENTISTS DISCOVERED TWO NEW LEMUR SPECIES JUST LAST YEAR.

P. 107 FRANS LANTING

Given her sense of identification with female leadership among lemurs, Wright was shocked when she learned recently that her greater bamboo lemurs have a dark secret. "Listen to them!" Wright cries out one morning on Trail W, where her lemurs are violently shredding the bark from towering bamboo stems. "They talk all the time. They crack open bamboo all the time. How in the world could I have had such a hard time following them for so many years?"

Female greater bamboo lemurs spend much of their day chewing through the hard outer surface of giant bamboo stems, till the pieces of stripped bark hang down like broken sticks of dry spaghetti. What the lemurs want is the edible pith, which looks about as appetizing as rolled vinyl. It also contains stinging hairs and, in young shoots, a small jolt of cyanide. Having adapted to digest that poison lets the species exploit bamboo, an otherwise underutilized resource.

"The female is using her teeth to open these bamboo culms, really working—and the male isn't there," says Wright. "And all of a sudden you hear this big squabbling noise, and the male appears just as she opens up the bamboo, and he displaces her and takes it from her!" The thought leaves her aghast. "*This is unheard of in Madagascar!* Then he moves on and takes away the bamboo from the next female."

At first, Wright and graduate student Chia Tan thought they were simply seeing bad behavior by one beastly male. Then a new male came in and did the same thing, forcing the researchers to contemplate the possibility that the greater bamboo lemur may be the only male-dominated lemur species. Wright and Tan theorize that the females cannot hear anything over the racket of their own chewing; they need the male to patrol the perimeter and alert them to danger. But they pay the price at feeding time. "It's beautiful to watch," says Wright, "it's *horrible* to watch."

THEY PAY THE PRICE AT FEEDING TIME. "IT'S BEAUTIFUL TO WATCH," SAYS WRIGHT. "IT'S HORRIBLE TO WATCH."

In another corner of the park, sifaka group three is feeding in a rahiaka tree, and Wright is talking about Mother Blue, the lemur for whom she has always felt the deepest empathy. During the first decade of Wright's work at Ranomafana, Mother Blue gave birth every other year, the normal pattern for sifakas. She raised two of her offspring to maturity, a good success rate for a lemur. Though female lemurs can live for more than 30 years, they produce relatively few offspring, most of which die young.

Mother Blue, says Wright, was not just a good mother but also a loving companion to her mate Old Red. "They groomed each other, they sat next to each other, they cared about each other." But Old Red eventually disappeared, and in July 1996, says Wright, a new female arrived in group one. Lemurs are by and large peaceful, but they still display the usual primate fixations on rank and reproductive opportunity. Male interlopers sometimes kill infants to bring their mothers back into mating condition. Female newcomers may also kill babies, to drive a rival mother out of a territory. Soon after the new female appeared, Mother Blue's newborn vanished. Then Mother Blue herself went into exile.

"I arrived a few months later and saw Mother Blue on the border between group one and group two, just sitting there looking depressed," says Wright. "I thought, this is what happens to old females. They get taken over by young females and just die."

DESPITE CONTINUING DEFORESTATION elsewhere in Madagascar, satellite photographs indicate that Ranomafana remains intact. Partly because of the success there, Madagascar now has 18 national parks. President Marc Ravalomanana has pledged to triple the amount of open space under government protection by 2008. Wright, among her other ambitions, hopes to establish a wildlife corridor stretching 90 miles south from Ranomafana. She also still yearns to find out what makes different species tick.

At the rahiaka tree, for instance, Earthwatch volunteers are keeping track of the lemurs as they feed on a reddish fruit about the size of an acorn. The edible part, a rock-hard seed, is buried in a ball of gluey latex inside a tough, leathery husk. It doesn't seem to discourage the lemurs. One of them hangs languidly off a branch, pulling fruit after fruit into its mouth, which is rimmed white with latex. The sound of seeds being crunched is audible on the ground, where Wright watches with evident satisfaction.

It turns out Wright was mistaken about Mother Blue. The old female lemur did not simply go into exile and die. Instead, she has moved into group three and taken up with Pale Male's son, Purple Haze, a decidedly younger male. The two of them have a 3-year-old, also feeding in the tree, and a 1-year-old, roaming nearby. Wright is delighted with the way things have worked out. (She has also taken up with another male: her second husband, Jukka Jernvall, a Finnish biologist.)

Mother Blue, whom Wright says is probably 28 years old now, has worn teeth. The Earthwatchers are recording how much she eats and how many bites it takes her. They're also supposed to collect scat samples containing broken seed remnants, to see how well she digests it. Someone squeamishly points out where droppings have just fallen in the thick grass. Wright wades in. She grabs a couple of fresh pellets with her bare hands and bags them for analysis back in the lab. Then she turns and leads her group uphill, deeper into the Ranomafana forest. "There is nothing more exciting than finding a new thing nobody knows," says Wright. "You won't believe it, but everything hasn't already been discovered."

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EVOLVING AN UNUSUAL APPETITE, GOLDEN BAMBOO LEMURS (OPPOSITE) DEVOUR YOUNG BAMBOO SHOOTS, SHUNNED BY MOST ANIMALS BECAUSE THEY CONTAIN CYANIDE. LEMURS' TYPICAL DAILY DOSE OF THE POISON IS ENOUGH TO KILL A HUMAN; NO ONE KNOWS HOW THEY MANAGE IT.

STUDENTS OF THE GAME

WHEN THE AZTEC AND MAYA PLAYED IT 500 TO 1,000 YEARS AGO, THE LOSERS SOMETIMES LOST THEIR HEADS—LITERALLY. TODAY SCHOLARS ARE VISITING REMOTE MEXICAN VILLAGES TO STUDY THE OLDEST SPORT IN THE AMERICAS, *ULAMA*, NOW ON THE VERGE OF EXTINCTION

BY JOHN FOX

PHOTOGRAPHS BY JANET JARMAN

"*¡DÉJAMELO!*" Jesús "Chuy" Páez shouts. "Leave it for me!" The nine-pound black rubber ball arcs high in the late-afternoon Mexican sky. Páez's teammates scatter, fanning out diagonally to defend their end zone. With a running leap, Páez throws his deerskin-padded hip into the ball, connecting with a punishing thud and launching the ball fast and low across the hard-packed dirt court's centerline.

"Your turn, old man!" Páez says as Fito Lizárraga, a youthful 56-year-old, prepares to return the ball. Bracing himself on the ground with one hand, Lizárraga pivots his hip to strike the ball low and sends it skidding back through the dirt. Lizárraga's teammates close in fast behind him as players from both teams take turns flinging themselves to the ground, and the ball ricochets between hips like an oversize pinball. Then, with a dive worthy of New York Yankees shortstop Derek Jeter, Páez knocks the ball past Lizárraga and his teammates, sending it crashing into a chain-link fence at the end of the court.

On the sidelines, the 30 or so Los Llanitos hometown spectators erupt in cheers—a point scored in another Sunday afternoon pickup game of America's oldest sport, *ulama* (from the Aztec's word for it, *ullamaliztli*). Archaeologists say that communities from the jungles of Honduras to the deserts of northern Mexico have been playing versions of it for the past 3,500 years. Against all odds, this ancient game survived the rise and fall of the Olmec, Maya and Aztec civilizations, not to mention the devastation wrought by the Spanish Conquest.

Yet today ulama faces extinction. The players' rela-

PROBING AN ANCIENT PASTIME, RESEARCHERS (SERGIO GARZA, BELOW LEFT, AND JAMES BRADY) OBSERVE THE PUNISHING SPORT OF *ULAMA* (OPPOSITE, CHUY PÁEZ IN LOS LLANITOS "HIPS" A BALL).

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ULAMA WAS SO KEY TO MESOAMERICAN CULTURES THAT IT INSPIRED THE HEMISPHERE'S FIRST SPORTS IDOLS (A 700 TO 900 A.D. MAYA FIGURINE WITH A LOINCLOTH, BALL AND DEER HEADDRESS).

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tive poverty and geographic isolation, a lack of natural rubber and competition from newer sports such as volleyball and baseball have driven it to the brink. The threat has brought together an odd coalition of academics, athletes and local businessmen trying to preserve it and study it for clues to how the ancient Mesoamericans lived.

TWO PROFESSORS at California State University at Los Angeles—archaeologist James Brady and art historian Manuel Aguilar—together with their students, form the Ulama Project. They seem unlikely sports fans. "For years, we archaeologists were stuck in a major rut," says Brady. "We'd go out, dig up an ancient ball court, date it and publish an article about it. But we rarely learned anything interesting or new about the game." Brady and Sergio Garza, his graduate student at the University of California at Riverside, specialize in ancient Maya caves; even by day they sport flashlights on their belts, as if a dark, unexplored crevice might present itself at any moment. For Brady, ulama represents an opportunity to conduct what's called ethnoarchaeology: by studying the modern game, he and his colleagues hope to better understand its past. "For so long," he says, "archaeology had ball courts without people in them. By recording the game as it's played today, we're putting the sport, the enjoyment and the competition back into the ball court."

THE HOUR-AND-A-HALF DRIVE from the beach resort of Mazatlán to Los Llanitos (pop. 151) begins on a jammed coastal highway lined with fast-food joints and high-rise hotels and ends on a bone-jarring dirt road winding through withered cornfields. Just past a church and a corral packed with cattle, Brady, Garza and I pull up to the tin-roofed home of 28-year-old farmer Chuy Páez. Tan, trim and wearing buffed cowboy boots and a large silver belt buckle, Páez steps over a dog sleeping in the shade of the porch and extends a hearty welcome.

Inside his concrete-floor bedroom is Páez's personal Wall of Fame. In one photograph, he's captured in midair, arms out and hip thrust forward, just seconds after striking the ball. In another, Páez's 11-year-old son, Chuyito, poses proudly in his deerskin loincloth, holding a ball that looks to be nearly half his size. As we tour the gallery, Páez reaches up into the rafters and unties a rubber ball from a hanging neckerchief. Then, leading us back outside, he positions me in one corner of the porch and walks ten feet to the opposite corner.

"*¿Listo?*" he asks with a grin. "Ready?" I nod tentatively. He bounces the ball—a little smaller than a bowling ball—across the patio floor. As I reach out to catch it, the nine-pound spheroid smashes through my hands and into my chest, almost knocking me to the ground. Brady laughs, having warned me of the weight. "See what I mean?"

JOHN FOX, who conducted research on ulama *for his doctorate in anthropology from Harvard, is a freelance writer in Vermont. JANET JARMAN is a photojournalist based in Mexico.*

For Brady, as for me, just absorbing the ball's impact for the first time was a revelation. Sure, he'd read in the writings of Diego Durán, a 16th-century Spanish friar, of the physical abuse endured by Aztec ballplayers, who "got their haunches so mangled that they had those places cut with a small knife and extracted blood which the blows of the ball had gathered." And though I'd written a 300-page doctoral dissertation on ulama, I had never before felt the blow of a ball against my hip. "It's one of those things you can read about all you want," says Brady, "but until you feel it for yourself and have the bruise to show for it, it's meaningless."

After a midafternoon lunch of *pozole*, a traditional Mexican hominy stew, Páez leads us to the town's playing field, or *taste* (pronounced TAS-TAY), a name believed to derive from *tlachtli* (TLASH-TLI), the Aztec word for ball court. Scholars have documented about 1,500 of them and excavated about 450. With their two long, low, parallel mounds forming an I-shaped alley, ulama courts are as distinctive as baseball diamonds.

Sixteenth-century Spanish chroniclers of the New World, most of them Franciscan friars bent on spreading the Christian faith, described with awe their first encounters with this peculiar sport, played with a solid ball that appeared to have magical properties. Hernando Cortés was so impressed with the game that he brought a team of players back to Spain in 1528 to perform in the royal court. But the friars soon learned that for the Aztec and other Mesoamericans, *ullamaliztli* was as much religious rite as sandlot sport. In their codices, or sacred books, the Aztec compared the bouncing ball to the cosmic journey of the sun into and out of the underworld. Highly ritualized ballgames enacted at key religious festivals helped to ensure the continuous cycles of nature and the cosmos. Ball courts in Tenochtitlan, the Aztec capital (in what is now Mexico City), were adorned with sculptures depicting local gods and other supernatural beings. Priests initiated important games with offerings of incense in nearby temples.

At least some of the games saw human sacrifice. The losing players—

TRADITIONALLY (BELOW, A COURT AT C. NINTH CENTURY XOCHICALCO, MEXICO), THE BALL SYMBOLIZED THE SUN. IN SOME VERSIONS, PLAYERS KNOCKED IT THROUGH A HOOP (ABOVE, AT CHICHÉN ITZÁ AND BELOW), SCORING A POINT—AND EVOKING THE PASSING OF THE SUN THROUGH THE UNDERWORLD.

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THE OLD BALLGAME HAS A FOOTHOLD IN REMOTE WEST MEXICO VILLAGES, WHERE GENERATIONS (IN LOS LLANITOS, CHUY PÁEZ, 28, FITO LIZÁRRAGA, 56, AND RAFAEL LIZÁRRAGA Y BARRA, 95, WITH A NEPHEW) HAVE SUITED UP FOR THE GRUELING CONTESTS (BELOW, DONNING THE PROTECTIVE *FAJADO*).

or unlucky stand-ins captured in battle—could literally lose their heads in post-game ceremonies. In one graphic depiction on the walls of the monumental ninth-century Maya ball court at Chichén Itzá in the Yucatán, serpents and squash plants sprout from the neck of a kneeling, decapitated player, bestowing fertility on the land and the living. A rival player wields a stone knife and the freshly severed head as his grisly trophy.

In 1585, the Spanish, citing such practices, banned the ballgames. But in remote frontier villages, ulama survived. "When the Spanish friars drove the game underground," Aguilar says, "it almost certainly lost most of its religious overtones." But some intriguing practices seem to hint at a residual link to ancient beliefs. According to Spanish accounts, for example, the Aztec played primarily on religious feast days; today in Los Llanitos, the game is played on Christian holidays. And while the ancient ball courts were often next to pyramid temples, today's *tastes* tend to be located next to village cemeteries.

Not that the game was ever entirely spiritual. In an early account of the sport's dark side, chronicler Diego Durán describes how some players "gambled their homes, their fields, their corn granaries, their maguey plants. They sold their children in order to bet and even staked themselves and became slaves, to be sacrificed later if they were not ransomed."

JANET JARMAN / CORBIS (5)

THE LOS LLANITOS *taste* hardly suggests the grandeur of its ancient precursors; it is a long, narrow alley of hard-packed clay lined with palm trees, about 12 feet wide and the length of roughly half a football field. At two o'clock on a Sunday, the first of eight players arrives. He is soon joined by others in a corner of the court that serves as a makeshift locker room. They strip to their underwear and put on *fajados*, four-piece leather-and-cloth girdles that protect the stomach, hips and buttocks. As the players take to the field to warm up, spectators stake out the best, and safest, spots—mostly in the end zones, the better to avoid a hurtling ball, which travels upwards of 30 miles per hour. Young boys, wearing fajados and the occasional baseball cap, imitate the players on the sidelines, while toddlers play safely behind the chain-link fence.

The game begins when a team of three to five players throws the ball high (*male por arriba*) or rolls it low (*male por abajo*) across a chalk-marked centerline. Play continues back and forth, with contestants using only their hips to strike the ball, until a point (*raya*) is scored when a team fails to return the ball, as in tennis, or when the ball is driven past the opponent's end zone, as in football. The first team to total eight rayas wins, though due to a complex scoring system that not only awards points but also takes them away, games can go on for hours or even, when halted by nightfall, days.

For Brady and his colleagues, what began as a purely academic study has turned into an all-out effort to save one of the Americas' oldest traditions. The pair recently petitioned the Mexican Ministry of Tourism, without success, to nominate ulama for UNESCO recognition, to attract more

interest and support. But in the end, ulama's survival may hinge on something far more pedestrian: the availability of rubber balls.

At one time, during the Aztec Empire, the southern Gulf Coast of Mexico was the heartland of rubber production. But since then, the rubber trees that once grew there have been wiped out by development, and the people of Los Llanitos and nearby communities have to travel hundreds of miles into Durango, a region increasingly under the control of Mexican drug lords, to find rubber trees to milk. As a result, the price of a single ulama ball has reached a staggering $1,000, or about $250 more than the annual income of the average Los Llanitos player. The town has only one playable ball—and regular use is shrinking it.

Mazatlán businessman Jesús Gómez, a longtime supporter of the game, has taken the lead in the search for an artificial substitute, and the Ulama Project's scholars have teamed up with members of the Mazatlán Historical Society to experiment with commercial latex from as far away as New York City. "If we can't get natural rubber," says Gómez, "we need to find another way. Otherwise, ulama will not survive. It's that simple."

So far, artifical rubber has failed to replicate the look, feel and, most important, remarkable bouncing properties of traditional balls. "Look at this," says Páez after the game at Los Llanitos. He drops a lumpy white blob of low-grade latex rubber, the result of Jesús Gómez's latest experiments, and watches it bounce erratically off his patio. "This doesn't work," he says with visible disgust. "It's not natural rubber." But the researchers have not given up. In La Savila, a neighboring village, Aguilar says players are field-testing a ball made of another artifical compound, and he remains optimistic that a substitute may soon be found.

After rubber balls, what ulama may need more than anything is followers. Although players have been invited to resorts in the Yucatán to perform for tourists in faux-Maya extravaganzas—complete with drums, feather headdresses and face paint—most decline, regarding the displays as exploitative and culturally inaccurate. For Páez and his teammates, ulama is a living sport that tourists should appreciate on its own terms, not a curiosity. Aguilar and his colleagues are working to convince Spanish-language television networks to sponsor a tour that would bring ulama to the streets of Los Angeles and other Latino population centers in the United States. Perhaps here, in a nation increasingly proud of its Latino roots, the oldest sport in the Americas will find the fans sufficient to carry it through another millennium or two.

ULAMA'S FATE DEPENDS QUITE LITERALLY ON HOW THE BALL BOUNCES: NATURAL RUBBER USED IN A TRADITIONAL BALL HAS BECOME SO SCARCE IT CAN COST $1,000, WAY BEYOND THE MEANS OF MOST CONTESTANTS (FOLLOWERS IN LOS LLANITOS). ULAMA FANS ARE SEARCHING FOR NEW RUBBER SOURCES.

EVILDOER

THE *BEOWULF* MONSTER IS A THOUSAND YEARS OLD, BUT HIS BAD OLD TRICKS CONTINUE TO RESONATE IN THE MODERN WORLD **BY MATTHEW GUREWITSCH**

WHAT A GIANT Grendel must be. For supper he scoops up sleeping warriors 30 at a crack. Imagine the width of his jaws. Yet Beowulf the Avenger brings him down in single combat. Stripped of armor, Beowulf rips the monster's arm off at the shoulder with his bare hands. Yet the hero is just a human being. Where does he get the leverage?

As invoked in the untitled, thousand-year-old manuscript from which we know him, Grendel has a voice to scream with, but no language; a presence to strike the heart with dread, but no clear form; a lineage going back to Cain, but no place in the fellowship of man. Dying, he escapes into the night. Later, it takes four straining warriors to carry his severed head. The blade that struck the blow melts like an icicle in Grendel's boiling blood. His reign of terror has lasted a dozen years.

Who weeps for Grendel? Not the Old English bard who composed *Beowulf* around the eighth century, two centuries or so before two West Saxon scribes set it down. (The dates are hotly disputed.) The moral universe of the age was black and white. But to John Gardner, a novelist in the 20th century, it was natural to view the ogre with some empathy. After Shakespeare's Richard III, Macbeth and Caliban; after Milton's Satan; after the Monster of Mary Shelley's *Frankenstein*, Gardner's attitude was hardly outlandish. After Robert Louis Stevenson's *Dr. Jekyll and Mr. Hyde*, to say nothing of Dr. Freud of Vienna, moral relativism is the air we breathe. Beneath the glamour of the Alien or the transgressive romance of the Villain lurks someone we need to know. In the immortal words of Walt Kelly, creator of *Pogo*: "We have met the enemy and he is us."

And in *Beowulf* we keep on meeting him, again and again. Lately, a rock opera and some puppet shows have been adapted from the poem. A study guide for a paperback edition suggests classroom skits of the hero's exploits. Hollywood has adapted the material repeatedly, and is doing so again. Now, a grand opera is on its way. For all its years, this titanic struggle between good and evil is still very much of this moment.

GARDNER wrote *Grendel* in the voice of the monster as existentialist: the enemy who is us. The 1971 book goes into his heart and mind, laying bare a soul-deep yearning for all the objects of human desire—and the disillusionment when they prove hollow. Read along with *Beowulf*, Gardner's prose version seems to tease out things the poet left unsaid. And this is done in English that is fleet and colloquial, while marked with

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an alliterative, allusive poetry that recalls the Old English of Grendel's origins: "Such are the tiresome memories of a shadow-shooter, earth-rim-roamer, walker of the world's weird wall."

In Gardner's *Grendel*, composer Elliot Goldenthal and his partner, director Julie Taymor, hear a hero crying out for a home in grand opera. They got to work on the project after their chamber-scale *Juan Darién: A Carnival Mass*, nearly 20 years ago. The novel had the Wagnerian sweep they were looking for. What's more, it shared with *Juan Darién* their favored theme of the outsider or the outcast: Juan, the jaguar cub raised as a boy; Grendel, the monster drawn to human society by the power of art. "The outsider, the detested one, ultimately he's the most human of all," says Taymor, a twofold Tony Award winner for *The Lion King*. "Shakespeare always gives the monsters the best poetry."

Goldenthal (an Academy Award winner for the score for *Frida*) went ahead with the opening scene: a monumental aria for the title character followed by a choral lament in Old English. "My original thought," Goldenthal says, "was that the title role would be a great vehicle for a bass baritone, working within a lexicon of vast contrasts."

Over the years, a recording of the opening scene circulated among influential conductors and impresarios, generating much encouragement. But not until 2003, when a joint commission from the Los Angeles Opera and the Lincoln Center fell into place (and with it needed funding), could Goldenthal devote himself to the project in earnest. Along the way, the poet J. D. McClatchy had signed on as Taymor's co-librettist.

Though Goldenthal has often written for the theater, *Grendel* is his first opera. True to the original conception, it encompasses extremes: Grendel's bass baritone set against the piping voice of a boy soprano, the mass of an opera orchestra in full cry against the plink of guitar strings. The première is set for May 27 at the Los Angeles Opera, running through June 17. (In July, the show travels to the Lincoln Center Festival, in New York.) Eric Owens, a basso of huge

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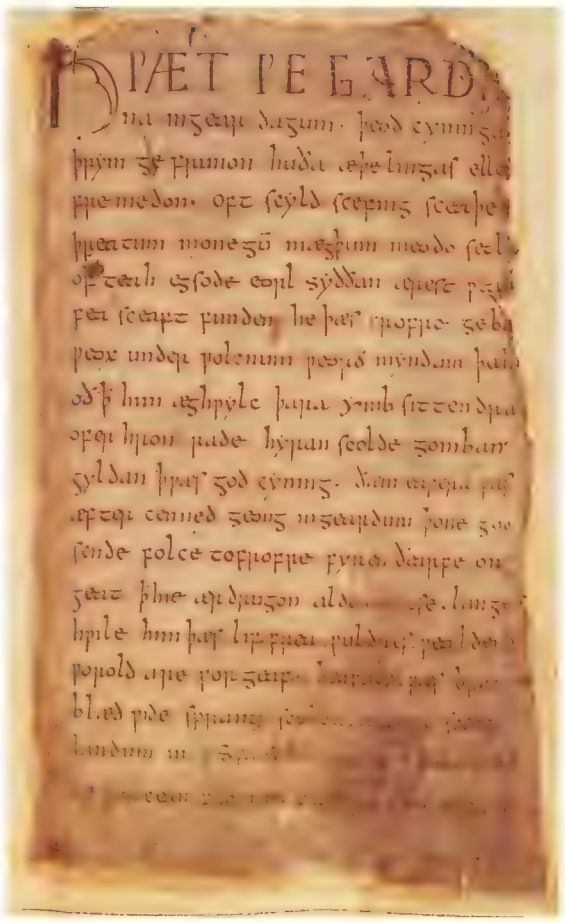
It might seem that *Beowulf* would recede into the mists of time, but one edition hit the bestseller list ahead of Bridget Jones.



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THE POEM (A MANUSCRIPT PAGE) WAS FIRST COMMITTED TO PAPER 1,000 YEARS AGO.

range, plays the title role. Denyce Graves, a mezzo renowned as Carmen and Delilah, appears as the cynical, all-knowing Dragon, who lazes away the centuries on a hoard of accursed gold. Male in the book, the figure is a diva here: "glamorous in the late Joan Crawford mode," says Goldenthal. She is trailed by Dragonettes, even as Grendel is doubled by a Child Grendel and a plurality of Shadow Grendels, and Beowulf's part is sung by the chorus.

One senses the director's guiding hand in such theatrical flourishes; and inevitably, with Taymor aboard, the production values are claiming the lion's share of pre-première interest. Indeed, her extensive stage directions in the libretto read like storyboards for a post-*Lion King* spectacular. But the show

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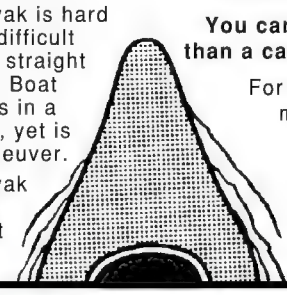

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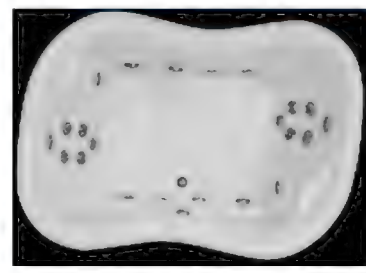

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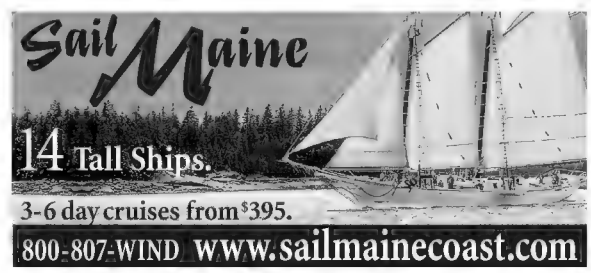

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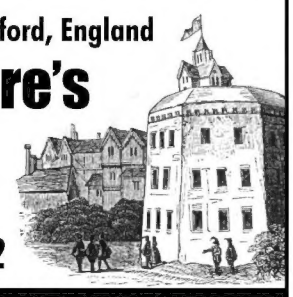
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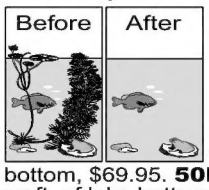
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that is materializing will be much, much simpler. "It's not that I won't do my job," Taymor says. "But I would need a giant movie budget to pull all that off. What excites me more than anything about this project is the music."

Press releases promise "a darkly comic retelling of the Beowulf epic from the monster's viewpoint." But perspective is everything. Serve a Tom Stoppard *Hamlet*, and he parries with *Rosencrantz and Guildenstern Are Dead*: less a retelling of Shakespeare's Danish tragedy than the excavation of the *Waiting for Godot* embedded within. Move Grendel to the center of the *Beowulf* tale, as the novel and opera do, and you enter the shadow realm of an awakening consciousness, laden with the moral perplexities of our time.

NOTHING IN THE POEM suggests the least hope of rewards beyond the grave—one reason among many to view the hero as pagan. Yet the *Beowulf* poet was not, and his faith in the Christian God is stamped on the story. God's is the glory of every victory, of which there are many. Grendel is but the most famous of Beowulf's conquests. The hero arrives on the scene with notches in his belt for nine whale beasts left dead on the ocean floor. From Grendel, he moves on to Grendel's formerly reclusive mother. When the Dragon goes on his rampage, Beowulf, now a king who has ruled bravely and wisely for 50 years, takes up arms for the last time.

As conceived, the poem is an allegory about Good versus Evil: that naive, never-ending Manichean dance. Conversely, much in the poem implies that might makes right: a lesson in ruthless realpolitik, with fatalistic interludes of lamentation. We have come a long way over the last millennium.

It may seem that *Beowulf* ought to have vanished in the mists of time by now. Even for specialists, reading the original has become a nigh-hopeless task. Scholars wrangle inconclusively over the interpretation of the difficult words, coinages and kennings ("giver of rings" for king or chieftain; "whale's way" for the sea) with which the manuscript bris-

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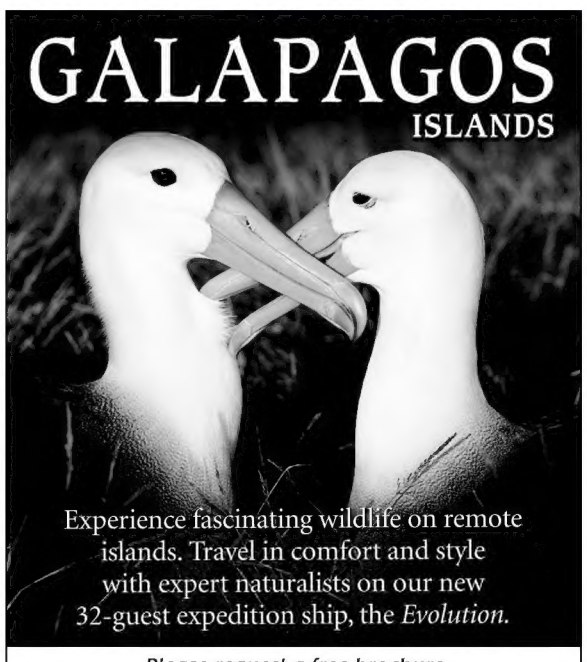

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In addition to the opera, *Beowulf* projects in the pipeline include two movies, one featuring the voice of Angelina Jolie.

tles. Happily, translations abound, the fruit of fantastic exertion. "It was labour-intensive work, scriptorium-slow," according to Seamus Heaney, the Irish Nobel Prize winner for literature, whose new Englishing of the Old English at the start of our millennium actually clawed its way onto the *New York Times* best-seller list, where it hovered south of Harry Potter but north of Bridget Jones.

That was only one indication among many that Beowulf's adventures still exert their hold on the collective imagination. Strumming his six-string lyre, the bard Benjamin Bagby vocalizes the poem in the old West Saxon, and uncomprehending hundreds are enthralled. Screen versions? Take your pick. There's an animated TV short, with Joseph Fiennes as the voice of the hero (1998); a sci-fi update distinguished by a gargantuan straight razor that serves as a sort of guillotine (1999); a *Beowulf and Grendel* atmospherically shot in Iceland (2005, awaiting U.S. release). In the pipeline: feature films from the newcomer Scott Wegener and from the live-action and animation wizard Robert Zemeckis (*Back to the Future*, *Who Framed Roger Rabbit?*, *The Polar Express*), with Angelina Jolie announced for voice work.

What accounts for Beowulf's enduring popularity? Partly, it may simply be that heroics never go out of style. The young in any culture need heroes as role models, whether from Homer or Marvel Comics. The child in the man (or woman) needs them too. Past adolescence, of course, we tend to worship our heroes with tongue in cheek. (Think James Bond, Barbarella, Shrek.)

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ening on 9/11. Instantly, the entertainment industry started holding the mirror up to an altered zeitgeist. Into the stream of fantasy that crested in Peter Jackson's *The Lord of the Rings* trilogy poured new torrents fed by serious military history (Oliver Stone's *Alexander*) and mythology for grown-ups (Wolfgang Petersen's *Troy*). However imperfectly, the movies were receding into an antique heroic age. In its various transmogrifications, *Beowulf* reflects the anxieties we feel today, and perhaps offers a kind of reassurance.

But artists may be prophets of a kind, and the choice of Grendel as an operatic subject now seems strangely prescient. Rather than the Outcast or Outsider Goldenthal and Taymor originally had in mind, Grendel now assumes the subtly different guise of a fellow much on our minds: the Other, epitomized by suicide bombers who shatter our world for no reason we can fathom. Yet if humankind is to evolve beyond its present miseries, what choice is there but to try?

Of course, political implications are in the eye of the beholder. Do they register with Goldenthal? "No," he says, "or only in the sense that Grendel has been confronted with various aspects of the human condition: art, politics, religion, love. And every time, his personal image has been rejected and feared." True enough. Take the scene early in the opera, as Grendel listens outside the great hall of the great king Hrothgar. Within, a bard is paraphrasing Genesis.

"But this man has changed the world / Changed it into make-believe," Grendel muses. "Brutal facts put in a poetic place." Overpowered by loneliness, he steps into the torchlight. Horror-struck, Hrothgar's men brand him the Enemy. He becomes what they behold, and he is changed.

"You," the Dragon tells Grendel, "are the darkness in which they see their little light."

Hard wisdom. How cold a place this world must be for a demon alone.

MATTHEW GUREWITSCH is a writer and speaker based in New York.

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Gloria Hamilton, a special friend who is thinking of the Smithsonian's future.

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MY COLD WAR HANG-UP

HOW I LEARNED TO STOP WORRYING AND MAKE PEACE WITH MY NUCLEAR PHONE **BY DEBORAH DALFONSO**

I FOUND AN OLD ROTARY TELEPHONE in a junk shop. Firetruck red. High gloss.

"Ten bucks," said Fred, the shop owner. The newspaper spread out before him, amid more junk, was open to the harness-racing results.

I handed him a one dollar bill and he put it in his cash box, never lifting his eyes from the paper.

"Works," he lied as I headed for the door.

"I'm sure," I lied back. You could count on two things at Fred's: everything was authentic, and anything that once did something didn't do it anymore. I wanted the phone because it was the real article.

It was square, with a receiver that lay on the top like a

drunk's arm across your shoulder, just like the black phone that sat on the hall table in our house in 1958.

That year I was in Miss L's third-grade class. "Only the president of the United States and the leader of Russia can have a high-gloss red phone," she told us. My mother said Miss L had a flair for the dramatic and referred to her as "your teacher, Miss Loretta Young."

"And when President Eisenhower picks up the receiver," Miss L continued, "it connects directly to Mr. Khrushchev's phone on his desk in Russia. Someday one of those two men is going to pick up the receiver and say, 'Bombs away!'"

That's why we practiced crawling under our desks every Friday. Bangor, Maine, would be their first target, Miss L added, because we had a military base in town.

We practiced saying "Soviet Premier Nikita Khrushchev," as if we could appeal to his compassionate side if we pronounced his name correctly. Grown-ups talked in hushed tones about the cold war, secrets, missiles, Communism, bomb shelters. They changed the subject when we walked into the living room.

Miss L, who did not talk in hushed tones, told us that Soviet Premier Nikita Khrushchev had had a terrible fight with Vice President Nixon about kitchen appliances. The Soviets thought Americans were so lazy that nearly everyone in the United States had a washing machine, she said. "Vice President Nixon poked his finger at the Soviet leader, so today might well be the day," she added brightly. I faked a stomachache. We all wanted to go home.

Forty-seven years later, when I walked into Fred's junk shop, I knew that only two men in the world had been allowed to own red telephones in 1958. By the time I walked out, I had convinced myself I had just purchased either President Eisenhower's or Soviet Premier Nikita Khrushchev's red telephone.

Nothing from Fred's ever worked, I reminded myself. I could plug it in and find out for sure in two seconds—but what if the Curse of Fred's was no match for a nuclear-related device? What if somebody answered?

THEM: *Da*?

ME: Huh?

THEM: *Da*?

ME: Could you speak *English*, please?

THEM: Bombs away!

I spent a week with the phone in my hallway, where its mute challenge reproached me every time I passed. Miss L started appearing in my dreams, her tangerine-lipsticked mouth saying, "Today might well be the day." (Why is it that none of us ever ratted her out to our parents?) My living room seemed to echo with hushed tones and halted conversations.

Finally I stowed the phone down in the cellar, in an old backpack. I still sleep uneasily, knowing it's down there, but at least I sleep: thanks to my vigilance, no one's going to accidentally nuke the world by, say, dialing for Domino's.

RICHARD THOMPSON

We welcome Last Page submissions, but due to the volume received, we cannot acknowledge receipt. Send to: Last Page, MRC 951-B, PO Box 37012, Washington, DC 20013-7012.